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THE CEREBRAL INTEGRATION OF THE OCULAR MOVEMENTS *

BY

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It is customary among us to commemorate great men from time to time by a lecture or discourse relating to their work or to some subject in which they were interested. To-day we meet to pay a tribute to the memory of Victor Horsley, almost on the twenty-second anniversary of his death in the service of his country, while striving for those ideals which characterized his life—the relief of suffering and the defence of liberty.

Horsley's name is indelibly inscribed on the records of human achievement. His work as a physiologist is incorporated in the heritage of our knowledge, and he will ever be remembered as a pioneer in the surgery of the nervous system, which since his day has grown as only his faith could have foreseen. But great though his achievements were in the realm of science, it is his personality which keeps his memory most vividly alive to those of us who had the privilege and good fortune to work with him. We recall his amazing energy, his enthusiasm for knowledge, the help he gave so liberally to younger colleagues, his kindness and generosity, and his unswerving devotion to the welfare of his fellows. I accept gratefully this opportunity to add my contribution to his memory.

The subject of this lecture is one to which Horsley's investigations contributed materially; some of his earliest work defined accurately an area of the cortex by stimulation of which ocular movements could be obtained; later he described the anatomical paths connecting the visual cortex with the oculomotor apparatus in the midbrain; and his latest experiments on the cerebellum, which unfortunately have never been published in full, dealt with the movements and postures of the eyes which can be elicited on electrical stimulation of this organ or result from lesions of it.

There are several categories of ocular movements. In the first place we can move our eyes by an act of volition, but few of their ordinary movements are in this sense voluntary or the result of a conscious effort. Any peripheral stimulus, as movement, a flash of light, or a sound, may deviate our eyes involuntarily towards its source, while accurate vision demands accommodation and fusion, which is effected by so arranging the visual axes that the images of the object at which we look fall on corresponding parts of the two retinae. Finally, there are the compensatory or adjusting movements by which the eyes are kept directed on an object when either it or our heads move. The upper part of the brain stem contains a complicated mechanism by which all these types of movement are effected and co-ordinated; here we are not concerned with this mechanism, but with the more highly evolved nervous centres at the behest of which it acts.

All our movements, those of our eyes as well as of our limbs and trunk, are directly or indirectly initiated, guided, and controlled by afferent impulses, and in the case of the eyes the most important impulses are those of retinal and labyrinthine origin. The work of Magnus in particular has shown how the labyrinths, either alone or in conjunction with proprioceptive impulses from the muscles of the neck, ensure the correct postural adjustments of the eyes to changes of the head in space; but in the higher animals retinal impulses suffice for the normal control of the movements and postures of the eyes even where the labyrinths or the fibres conducting from them are destroyed.

Differences in Organization of Vision between Man and Animals

Experiments on animals have contributed much of what we know of the physiology of ocular movements, but all conclusions from such experiments are not applicable to man owing to essential differences in the organization of vision. In the first place each human retina contains an area of highly developed sensitivity at the fovea which is employed exclusively for distinct vision, and many of our ocular movements are directed to allow a distinct image of the object which interests us to fall on this part or keep it there; in lower animals which do not possess differentiated foveae such movements are naturally not fully represented. Binocular vision is also more accurately organized in man. Further, though in the phylogenetic scale vision is the first function to acquire cortical representation, the visual cortex is more highly elaborated in the primates, and in man complex associational areas which play a part in the movements of the eyes develop around it. The differences in the organization of cortical vision in various animals are obvious from the effects of destruction of the occipital lobes. All observers agree that in man no perception of light or reaction to retinal impulses, except contraction of the pupils, can be obtained when the occipital lobes are destroyed. In monkeys, closure of the lids occurs on sudden illumination (Klüver); dogs can in addition react to differences in intensity of illumination (Marquis); rodents may recognize the position and distance of objects, and even avoid obstacles (Lashley), while birds from which the forebrain has been removed may react even more normally to retinal

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stimuli. During ascent in the animal scale there has been, therefore, a gradual transference of vision from lower to higher levels of the nervous system, till in man it is exclusively a function of the cortex.

Parallel with this movement of vision corticalwards there is a similar "encephalization," or transference towards the forebrain, of the seat of reactions which may be excited by retinal stimuli till in man no movements in response to light are obtainable without participation of the visual cortex. It is therefore on the study of clinical material that we must mainly rely in any attempt to understand the physiology of the ocular movements in man. But the methods should be the same as those of the experimental physiologist—to study the simpler components of a complicated function by isolating each of them, and then attempting to integrate the separate parts into a normally functioning whole. We must, however, remember that symptoms of dissociation of the ocular movements cannot be simply interpreted as loss of function of the injured part; they are usually the response of the organism to the abnormal situation produced by the lesion, and include, as Hughlings Jackson repeatedly insisted, manifestations of disordered activity of undamaged structures.

Cortical Areas Concerned in Eye Movements

In both man and lower animals movements of the eyes can be obtained by stimulation of certain parts of the cerebral cortex. One of these, which was originally described by Hitzig and Ferrier but was more accurately localized by Beevor and Horsley in the ape, lies in the frontal lobe, separated by inexcitable cortex from the motor centres of the precentral gyrus. Cushing, Foerster, Penfield and Boldrey, and others have demonstrated it in man. The function of this oculogyric centre has naturally been compared to that of the precentral motor area, but Sherrington has shown that in the chimpanzee there are such marked differences in the nature of its responses that it is necessary to put it into a separate physiological category. It is interesting that Beevor and Horsley, in contrasting the responses from this frontal area in the orang-outang with those they observed in the bonnet monkey, recognized these same features—a slowness in development and in execution of the movements of the eyes. The projection fibres from this frontal centre pass through the anterior portion of the internal capsule, then probably enter the cerebral peduncle and turn dorsalwards into the tegmentum.

The fact that destruction of this frontal centre does not produce a persisting palsy of any of the ocular movements has raised doubt on its significance. It may be that, as Wernicke suggested, all ocular movements are represented in both frontal lobes and consequently, as in other bilaterally innervated movements, the effects of a one-sided lesion may be compensated by the unaffected side. Permanent voluntary palsy in man has, however, been described by Tilling, Lutz, and others as a result of bilateral frontal lesions, but Ferrier and Turner observed no paralysis after removal of both frontal lobes in the monkey.

Ocular movement can be also obtained by electrical stimulation of the visual cortex on the inner aspects of the occipital lobes. This oculomotor area was first described by Schaefer and later studied by Munk and others, including Foerster, in man. According to some it is the cortex immediately around the visual area rather than the area striata which is excitable, but from our point of view this matters little. It was naturally suggested that movements elicited from it are due to subjective visual impressions excited by the stimulus and that these activate the frontal oculomotor centres, but Munk showed that they could be still evoked after he had isolated the occipital lobe from the rest of the cortex by a deep incision. That there is an apparatus in the occipital lobe from which ocular movements can be excited directly was made more probable by the demonstration by Beevor and Horsley of fibres passing from here to the anterior quadrigeminal bodies in the neighbourhood of the oculomotor nuclei. About the same time Probst described these cortico-tectal fibres in the cat. According to later authors, as Minkowski, Biemond, and Poljack, they take origin in the cortex around, not within, the area striata. They descend through the occipital lobe medial to the optic radiations, and pass through the pulvinar and the anterior brachium to reach the tectum of the midbrain.

There are therefore two widely separated cortical areas concerned in movements of the eyes, and each has its own projection tract to the oculomotor mechanism in the brain stem. A study of the effects of their injury or destruction throws light on their functions and on the part each takes in the normal organization of the ocular movements.

Effect of Disturbances of Frontal Centres

Disturbances of the functions of the frontal centres produce the more obvious symptoms. These usually result from involvement of the frontal projection fibres in the internal capsule or in the neighbourhood of the anterior part of the midbrain rather than of the cortex, and in this respect they are comparable to the loss of voluntary power in the muscles of the lips, tongue, palate, and larynx which characterizes pseudo-bulbar palsy.

The most striking features of a typical case is the inability of the patient to move his eyes to command or, when ordered, to look at an object in one or possibly in any direction. For instance, on command to turn his eyes to the right or to look at an object in the right half of the field of vision no deviation of the eyes occurs, though the effort at movement is obviously great. The attempt is often accompanied by expressions of distress; one patient on being asked to look to the right first turned his head in that direction, then jerked it about and raised it from the pillow, flexed his body forward and rotated it to the right, advanced and flexed his arms, clenched his fingers, and groaned and protested he could not do it, an example of the "catastrophic reaction" which Goldstein has described associated with failure to carry out a task owing to a cerebral lesion. Even when the head is actively turned in the desired direction the eyes often fail to move with it.

This condition at first sight shows all the appearance of loss or paralysis of the movement, but that this is not present becomes obvious when the subject is asked to follow with his eyes a slowly moving object; then, provided the rate of movement is uniform and not too fast, a full range of deviation may be obtained. If, however, the displacement of the object he attempts to follow is too rapid or irregular the eyes move through only a small angle and quickly slide back to their position of rest. When the patient looks at a slowly rotating drum on which lines or figures are displayed the eyes also deviate in the direction in which the figures move, but the optic nystagmus seen in normal persons does not appear. He may also fail to converge on a near object, but can do so when a distant object is slowly approached to his face. We therefore find that though voluntary effort fails to produce movement the eyes follow a moving point the images of which fall on the foveae.

The influence of foveal impulses on the execution of these movements is obvious, but impulses from the imme-

diate neighbourhood of the maculae may be effective too. If there are two marks on a sheet of paper the patient may be unable to turn his eyes from one to the other, but he can often do so when the marks are joined by a line; his eyes then as it were creep along the line from one point to the next, the movement being excited by a series of impulses coming from the confines of the foveae. Similarly the eyes can travel along a series of closely arranged dots, the retinal image of each succeeding dot being an adequate stimulus. Attempts to read reveal the same facts; the eyes travel slowly from letter to letter, but if there is too wide a space between the words the attempt may fail. At the end of the line he is unable to bring his eyes leftwards to the beginning of the next line, but frequently patients surmount this difficulty by moving a finger slowly along the line as they read and by it lead the eyes back to the start of the next line.

Movement of the eyes can be elicited even more easily by either active or passive movement of the head; if, for instance, the subject is unable to look up or to the right his eyes may deviate upwards when his head is bent forwards and to the right when his head is rotated to the left: his eyes move simultaneously with his head and through an equal angle, but in the opposite direction. This compensatory deviation has been by several authors attributed to adjusting reflexes of labyrinthine origin, but though this may be their nature in animals under certain experimental conditions we shall later see reasons why it is not the explanation. Bielschowsky, who originally regarded it as a labyrinthine reaction, later stated that this holds only if the movement of the head is quick and abrupt. Labyrinthine reflexes may, however, play a part, for in some of these pathological cases a compensatory deviation of the eyes occurs even when the lids are closed and all retinal stimuli thus excluded, and in a patient with complete cortical blindness whom I examined the eyes moved to the left when the head was passively rotated to the right, and vice versa. On the other hand, in two patients who were deaf and in whom no vestibular reactions could be excited I found that the eyes moved with the head when the lids were closed; as both retinal and vestibular impulses could be excluded the probable explanation is that the tone of the ocular muscles dependent on their own proprioceptive impulses kept the eyes in their nomal relations to the orbits.

When the eyes are deviated from their normal central position either by following a slowly moving object or by rotation of the head, the patient may be unable to move them back, or he may experience much difficulty in doing so, particularly if the eyes remain fixed on the original point; this is one of the arguments against compensatory deviation being essentially of labyrinthine origin, for the stimulus which excites the labyrinths is movement, and reflexes dependent on them cease rapidly at the end of the movement.

Further investigation of these symptoms helps us to understand their nature. All observers have been struck by the fact that the paresis is variable; under certain conditions no voluntary movement can be observed, under others the eyes can move through a modified range at least. Though in a typical case deviation of the eyes to either side on command or towards an object is impossible, the eyes move simultaneously with his head, but in the opposite direction, when his head is rotated. If, however, the lids were closed, or if the experiment is carried out in a dark room, or if a screen is held immediately in front of the eyes, so near to them that no point can be accurately fixed, this compensatory deviation does not occur. There must therefore be a visual factor concerned in the phenomenon, and this factor seems to be fixation—that is, the tendency to keep the images of the object at which the subject looks on the foveae, either by maintaining the postures of the eyes or by moving them.

The Fixation Factor

Another series of tests emphasizes even more strongly how important this factor is. If in a normal person one ear is irrigated by cold water nystagmus is evoked, the slow phase being towards the ear which is irrigated; the same effect is obtained by passing a galvanic current through the two ears or by rotating the person. In many of these pathological cases, however, no nystagmus develops, but the eyes become strongly and persistently deviated in the direction towards which the slow phase of the nystagmus should occur—that is, towards the irrigated ear, or towards the anode of the galvanic current. This deviation is frequently so strong that it is uncomfortable or distressing to the patient. It varies, however, under different conditions of examination. In one patient who lacked almost all voluntary movements of the eyes it was generally very pronounced, but on other occasions it could not be elicited. Further examination showed that its appearance was influenced mainly by the patient's visual interest in his surroundings; for when his eyes were not fixed on an object, or when his lids were closed or his eyes screened, a strong deviation could always be obtained, but when his eyes were fixed on any point, as on the eyes of the observer who sat in front of him, even the strongest vestibular stimulation often failed to produce any deviation. Fixation, which was the only variable factor in these experiments, is therefore capable of inhibiting the powerful reflex deviations which in its absence can be obtained by stimulation of the labyrinth.

Fixation may influence even volitional movements, for patients in whom the degree of palsy is not great can often move their eyes on command or look towards an object when accurate fixation is made impossible by placing convex lenses or a screen in front of the eyes. In severely affected cases the range of movement possible under these conditions is usually small, and the movements, which obviously need great effort, are jerky and discontinuous, but in milder cases an approximately normal degree of deviation may be observed.

In attempting to follow a moving object the accuracy of fixation also plays a large part; success is possible only when the subject's eyes are accurately directed on the object before it moves, and if its movement is so rapid or so irregular that fixation is for a moment broken—that is, if its images no longer fall on or in the immediate proximity of the foveae—the eyes cease to follow it and recede towards their position of rest.

These observations explain a curious paradox which has often been observed in these patients. Though they fail to move their eyes in one or in all directions on command and to turn them towards an object, the eyes may at times move about in a more or less normal manner. Tiling, in the first recorded case of this type, found that though there was apparent paralysis of vertical deviations and of movement to the right, the eyes sometimes moved involuntarily in these directions; in Bristow's case, recorded a few years later, "the eyes moved independently of her will," though there was no power of voluntary movement; in a similar case Roux reported that "nothing in the hospital ward escaped the patient"; and one of my own cases was regarded by the nursing

attendants as "hysterical," as they observed that his eyes frequently moved about as he lay in bed but failed to do so while being tested. Such spontaneous movements are most often seen when the patient is drowsy or half awake, or when he is in a state of emotional excitement; for instance, one man who was unable to move his eyes voluntarily became excited while being prepared for vestibular tests, and his eyes rolled about in all directions.

It was also repeatedly found that when these patients tried to look towards an object they employed various devices by which to interrupt the fixation of the point on which their eyes were directed: some blinked or closed their eyes momentarily, or jerked their heads abruptly; one man occasionally brought his hands before his eyes. It is therefore obvious that fixation of the eyes on an object tends to impede voluntary ocular movements and can even inhibit the powerful reflex reactions excited by labyrinthine stimuli. It is now necessary to consider the nature of normal fixation.

The Nature of Normal Fixation

Fixation means the maintenance of postures of the eyes by tonic contraction of the ocular muscles so that the retinal images of the object which is fixed fall on the two foveae. These postures can be kept up with remarkable accuracy for long periods. It is true that fixation in this sense is only relative, for the lines of vision constantly oscillate through small angles about the point fixed and consequently the images move over the foveae; this avoids sensory adaptation, and the appearance of after-images which would interfere with the acuity of vision. But fixation does not imply only immobility of the globes in relation to the orbits, for we can fix moving objects and keep our eyes on a point when our heads are in motion; this requires constant adjustment of the eyes by contractions and relaxations of their muscles, for the slightest displacement of the head necessitates a compensatory deviation of the eyes in the opposite direction, so accurate and immediate that the foveal images remain relatively stationary. By voluntary effort alone this accurate adjustment of the eyes would certainly not be possible, and the observations referred to above show that fixation may persist when volitional movement is defective. Fixation must therefore be regarded as, in part at least, a reflex act. But fixation, as all the other visual reflexes, requires perception—that is, the intervention of consciousness—and in this respect the fixation reflex differs from those reactions in which only the lower levels of the nervous system are concerned, to which the term "reflex" is usually applied.

Normally, fixation is under the control of volition, for we can move our eyes from object to object as we will, but when voluntary movement is defective the fixation reflex becomes so dominant that the eyes may remain anchored to an object and can move from it only when the reflex is broken by interruption of the retinal impulses. It is for this purpose that persons affected with this condition blink, jerk their head, or place a hand between their eyes and the object which fixes gaze. We can speak of the pathological condition as "spasmodic fixation." It was first observed and carefully described by Gowers in 1879.

Spasmodic and Reflex Fixation

Spasmodic fixation is comparable to the spastic paresis which results from lesions of the cortico-spinal tracts; in this condition there is, as in the eyes, a defect of voluntary power, but movement is also interfered with by increased tone of the muscles due to uninhibited reflexes initiated by proprioceptive impulses from the muscles themselves, and it disappears when the muscles are deafferented. The exaggerated tone of the ocular muscles, on the other hand, is dependent on retinal impulses acting on a cortical mechanism no longer under control; when these impulses are interrupted tone decreases, the power of voluntary movement improves, and the responses to other stimuli, either voluntary or labyrinthine, are no longer impeded.

It is impulses of foveal origin which determine reflex fixation. On the other hand, the chief function of the peripheral parts of the retinae is when an image excites them to bring about such movements of the eyes that the images fall on the foveae. James has aptly said that the periphery of the retina acts as a sentinel which cries out "Who goes there?" and if necessary calls up the more accurate vision of the foveae. Owing to the increasing sensitivity of the retina as the fovea is approached the tendency of peripheral retinal stimuli to determine fixation is greater the more closely to it the images fall. Even in adult life these fixating movements are largely reflex: a flash of light or a sudden movement in the periphery of our fields of vision attracts our gaze whether we wish it or not. This reflex which determines the fixation of extra-foveal images is the means by which patients suffering from paralysis of voluntary movement can read, follow a line with their eyes, or count a row of dots: each succeeding letter, dot, or segment of a line tends to excite a movement, and if the impulse which initiates it comes from near the fovea it may be intense enough to interrupt the strong fixation reflex which tends to impede all the other visual oculomotor reflexes as it does voluntary movement of the eyes.

A special feature of these reflexes is that they imply, in addition to conscious perception, interest and attention. It is only the object which occupies attention that excites the fixation reflex; only the succeeding word or dot which interests the patient that draws his eyes towards it; only the gesture in which he recognizes a threat or danger which makes him blink and turn his eyes away.

Other symptoms which some of these patients present throw further light on the nature of this condition. For instance, one man who also suffered from severe pseudo-bulbar palsy was unable to separate his lips, open his mouth, or perform the movements of chewing on command, but when bread was placed in his mouth he masticated it; he could not protrude his tongue, but when sugar was placed on his lips he licked it. In these respects he was simply a reflex machine. If shown appetizing food he merely smiled, but if the food was brought slowly towards his lips his mouth opened at once and he began to champ his jaws as if chewing, but this occurred only when food in which he was interested was approached to his lips. He therefore possessed another visual reflex—that is, a complicated purposive action independent of volition—which was excited by retinal impressions and which entailed not merely perception of an object but also recognition of its nature and of its spatial relations to himself.

The anatomical lesions responsible for the condition characterized by loss or diminution of the power of voluntary movement associated with exaggeration of the fixation reflex may be situated in various parts of the brain. In a few of the recorded cases there were bilateral injuries of the frontal oculomotor centres (Lutz, Tiling), but more commonly the projection fibres from these centres were involved in the internal capsule or caudal to

it. It is an interesting fact that, as in the case of the supranuclear palsies of the facial and bulbar muscles, these paralyses of the voluntary ocular movements are more commonly due to affections of the projection tracts from the cortex than of the cortex itself. In some cases the disease was familial and progressive, probably a primary degeneration of these fibres (von Palláthy, Ballet, Cantonnet, and Taguet).

Effects of Interference with the Visual Reflexes

On turning from this condition characterized by loss of voluntary movement and exaggeration of the fixation reflex to a study of the effects of direct interference with the visual reflexes we encounter considerable difficulties, for all these reflexes use the same afferent paths as vision, and probably are mediated through the same cortex as that by which visual impressions are perceived. Consequently lesions of their afferent fibres or of the cortical reflex centres cause at the same time loss of vision, and in absence of vision these reflexes cannot be studied. Since, however, the cortico-tectal fibres which constitute the efferent limb of the reflex arc run a dorsal course through the pulvinar they may be involved by lesions which spare the optic radiations as well as the descending fibres from the frontal oculomotor centre. Bilateral injury of these cortico-tectal fibres is very rare, and as part of each fovea, from which the more important visual reflexes are excited, is represented in both hemispheres of the brain, unilateral lesions do not produce striking effects.

When we wish to see an object distinctly we usually adjust or move our heads so that our eyes in their position of rest are directed on it; this posture of the eyes demands little if any effort, and voluntary action alone may suffice to keep it up. It is often by rotating our heads too that we follow a moving point or a series of closely spaced objects, as in reading. The fixation reflex is therefore not essential, and its absence causes no pronounced disturbance. But when the eyes are turned widely from the middle line the maintenance of the new position demands considerable effort and it tires rapidly even when supplemented by a normal fixation reflex, but as long as the deviation is kept up fixation is accurate. If, however, the reflex is defective, fixation cannot be maintained accurately by voluntary effort alone, though the ocular movements are unimpaired. This disturbance is most commonly seen on deviation of the eyes to one side. When the patient is asked to look at an object to this side he moves his eyes promptly towards it, but he fails to keep them directed steadily on it; they quickly recede towards their position of rest and are brought back by a series of jerks which are obviously voluntary. In following a moving object, especially if the rate of movement is not uniform, or if his head moves while he attempts to fix a stationary point, the difficulty in keeping up fixation is even more pronounced; the necessary ocular movements are possible, but the reflex maintenance of the position obtained is deficient. This failure to fix accurately is generally more pronounced the further the object to be fixed is from the middle line; in other words, it is roughly proportional to the muscular effort which the deviation requires.

When this disturbance is bilateral the symptoms are more striking. The patient complains of inability to see distinctly or to focus properly. When his head is not steady, as when he walks or rides in a carriage, the difficulty in obtaining clear vision of any object is even greater. That it is not merely due to diplopia or failure of fusion of the retinal images is evident, as it persists when one eye is closed. Orzechowski has given an excellent description of this condition in two patients: their eyes oscillated about the object they tried to fix; they were unable to "seize" or "hold" objects with their eyes, especially on deviation to one side; in reading they failed to follow accurately letters or lines; moving objects could not be accurately followed by the eyes; and when walking or in motion they were unable to recognize or distinguish objects by vision. Erb and others have observed similar cases.

Here there is no question of ocular palsy or of nystagmus, from which the condition differs in its manifestations and in the disturbances it produces; vision is normal or at least adequate, scotomata are not present, and there is no defect in visual orientation—to any of which inability to fix accurately may be due. There is consequently a state characterized by a failure of fixation, though the muscular apparatus of the eyes and its central innervation is intact; it is essentially an inability to keep the eyes steadily in a position to which they have been brought by voluntary contraction of their muscles.

It is well known that when hemianopia is present the patient often fails to keep his eyes accurately on a point to the hemianopic side even when they are directed towards it. This had been usually attributed to the loss of vision, but as his gaze may remain fixed on a point directly in front of him—that is, when his eyes are in their position of rest—it is obvious that this cannot be the only cause. Further, this failure to fix may be present even when there is some degree of macular sparing. The more probable explanation is that the voluntary movement is not supported by the fixation reflex which is normally mediated by the damaged or isolated visual cortex.

Inadequate fusion or defective accommodation may be partly responsible for the disturbances of vision of which these patients complain. One of my patients said he could not fix his eyes steadily and that they tended to roll about, another that she could not focus and that on attempting to read the letters ran into one another. In neither of these cases could diplopia be demonstrated, yet both read more easily with one eye closed; the fusion reflex by which the coalescence of the two images is effected in binocular vision was evidently at fault. Bielschowsky has also described loss of fusion in a case with lesions in each occipital lobe.

We have seen that when the fixation reflex is not under the control of other cerebral mechanisms there is a tendency to exaggeration of its function, with the result that the eyes cannot easily be diverted from the object on which they are directed. In these cases, on the other hand, the fixation reflex is defective, and post-mortem evidence goes to show that this defect is due to interruption of the cortico-tectal fibres which form the efferent limb of the reflex arc. In my own cases, which were verified, the disease involved the dorsal portion of the thalamus, including the pulvinar.

These two series of observations are complementary. The most striking feature in the one series was loss of deficiency of voluntary movement associated with a tendency to persisting fixation of the eyes on a point in central vision, from which they could not be easily diverted by will or even by the intervention of other reflexes unless central retinal impulses were suppressed. In the other series the subject was unable to keep up fixation accurately, particularly when he or the object to be fixed was in motion, and in some cases fusion and accommodation were probably disturbed too.

These observations have emphasized the reflex nature of fixation, but there can be no doubt that under normal

conditions fixation is partly voluntary. The fixation reflex, however, supplements and steadies the voluntary effort; but it is, on the other hand, under the control of volition. On the normal co-ordination of these two functions the accurate and purposeful use of central vision depends.

The Brain and Oculomotor Activities

We can now consider what parts of the brain are concerned in these oculomotor activities and then discuss how in normal life they work together.

All evidence at our disposal indicates that the frontal oculomotor centre is concerned in those movements and reactions of the eyes which we may call voluntary. Through it we can by an effort of will look or turn our eyes in any direction and converge them on a near object. By it, too, we can keep our eyes directed on any object that interests us, though this is largely a function of the occipital cortex.

The functions of the occipital centre are more numerous. Fusion—that is, the reactions necessary to unify the separate impression from the two retinae—and accommodation depend on it. The movements of the eyes to an object outside central vision, in so far as it is involuntary, is also excited through the occipital cortex by extrafoveal impulses. And finally the maintenance of fixation on a point, whether it is at rest or in movement, is determined by a cortical reflex mechanism in the occipital lobes.

The abrupt turning of our eyes to an unexpected sound or towards a peripheral stimulus is a more complicated reaction which implies spatial localization; the evidence as to the oculomotor centre through which these movements are effected is incomplete, but the frontal cortex is probably concerned in them, for what we know of its organization indicates that no part of the cortex is devoted exclusively to so-called voluntary activity. In other reactions, as blinking and aversion of the eyes from threatening gestures, and in ocular movements which imply judgment of the nature of the stimulus and of its position in space, more extensive areas of the cortex are involved. The reaction to threats can be, for instance, abolished by small lesions of the parietal lobe, and the experiments of Rademaker and Gelderblom show that in the cat the associated closure of the lids depends on the integrity of the sensorimotor cortex. The movements of our eyes in response to labyrinthine and other proprioceptive impulses is effected by subcortical mechanisms; the forebrain is not concerned in them.

The integration or harmonious working of the different parts concerned in ocular movements and postures is to some extent revealed by the disintegrations of these functions which we have studied, and these serve also to illustrate other activities of the cortex.

In the evolution of the brain vision is the first sense organ to obtain a presentation in the cortex of the forebrain. Even in birds fibres carrying retinal impulses reach what is regarded as the original neopallium; it is only later in evolution that other sense organs attain cortical connexions, and it is still later that so-called "motor centres" appear. With vision, too, localization in the cortex reached its acme, for every point of the retinae is represented rigidly in it; then the brain, if we may speak teleologically, decided that such a rigid machine was unsuitable to its further development and adopted a more plastic organization for its later-evolved functions. It is consequently not surprising that cortical visual reactions are more highly organized, and possibly organized on a simpler plan, than other cerebral activities.

Even in birds the original visual cortex is connected with the roof of the midbrain by efferent fibres—the tractus occipito-mesencephalicus of Kappers—which are probably the homologue of the cortico-tectal fibres of mammals, and by means of these the cortex may be able to influence reactions, including ocular movements and postures, in response to retinal stimuli. As the cortex became the main, and finally the exclusive, organ for visual perception, the primary visual reactions—as reflex direction of the eyes to light, accommodation, fusion when binocular vision was acquired, and fixation—were transferred to it, till in man they can be evoked through it only. The next step in development was the appearance of associational areas around the visual cortex which enable it to co-operate with other sense impressions and to elaborate further the faculties of spatial perception, discrimination, and recognition. At this stage in evolution control of visual reactions by higher cerebral functions—as consciousness, attention, and discrimination—became necessary, and the newer cortex of the frontal lobe was given this task. Now that the exploration of space by the eyes and the direction of gaze towards any object of interest no longer depended wholly on visual impression, reactions to vision were no longer confined by the fatality of a reflex: there was now a mechanism by which behaviour and reactions to environment could be greatly extended. This is the primary significance of the development of a frontal oculomotor centre.

But in order that a highly evolved function can adequately serve its purpose it is essential that it can control subordinate mechanisms, so the frontal centre became not merely an organ from which ocular movements could be evoked, it acquired also the power of inhibiting inappropriate and undesirable activities of the occipital lobes. The importance in ordinary life of this faculty of inhibition is demonstrated by the exaggeration of the fixation reflex when the voluntary motor centres of the frontal lobes are out of action; the eyes then become fixed on an object, to the exclusion of the rest of the environment.

Conclusion

We can therefore conclude that in normal conditions there is an accurately adjusted co-operation between all parts of the cortex concerned in ocular movements. Through the occipital centres some visual reflexes excite movements which turn our eyes towards objects in the field of vision; other reflexes determine by fusion and accommodation the accurate perception and the unification of binocular images; others keep the eyes fixed on any point which claims attention or excites interest. The frontal centres make possible the turning of gaze in any desired direction and the exploration of space, but they also keep under control, or inhibit, reflexes that are not appropriate to our conduct or our reactions to the world around us.

The College of Physicians of Philadelphia has awarded the Alvarenga Prize to Dr. Richard E. Shope of the Rockefeller Institute for Medical Research, Princeton, N.J., for his brilliant recent researches on the aetiology and epidemiology of influenza. The prize was established by the will of Pedro Francisco de Costa Alvarenga of Lisbon, Portugal, an Associate Fellow of the College of Physicians, to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883, to the author of the best memorial or unpublished essay upon any branch of medicine which may be deemed worthy of the prize.

CHRONIC MASTITIS AND BREAST CANCER

A FAMILY HISTORY OF FIVE SISTERS

BY

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(WITH SPECIAL PLATE)

This history of a family of five sisters pursued by breast cancer covers a period of about nineteen years, during which, with regrettable gaps, hesitations, and refusals of advice, I have been jointly responsible with their own doctors for their defence against the family foe. It is known that their mother died at the age of 69 of cancer of the liver, and her mother at the age of 37 of abdominal cancer, probably gastric, since it was attended by persistent vomiting.

In advising this family I have been guided by the following convictions.

(*a*) Chronic mastitis is a precancerous condition.

(*b*) Chronic mastitis is often amenable to deep *x*-ray treatment without operation, and consequently deep *x*-ray or radium treatment may be an effective prophylactic against cancer.

(*c*) The protection afforded by *x* rays is neither absolute nor permanent, and cases so treated should come every three or six months for re-examination.

(*d*) Cases of chronic mastitis in immediate danger of cancer present recognizable clinical peculiarities, and should generally be treated by mastectomy.

(*e*) Breast cancer should be treated by radical operation, with simultaneous radium to the internal mammary glands and subsequent moderate prophylactic *x*-radiation. Exceptionally, Keynes's radium method may be preferable.

Five separate breast cancers in the family have been treated by radical operation—four by myself and one by Mr. Turner Warwick; and in addition two simple mastectomies have been done—one for incipient cancer, the other for precancerous mastitis. In the result, two of the sisters have died of breast cancer and three are well at the time of writing. The two sisters who died survived operation eleven and nine years respectively. These results, in the face of intense predisposition to the disease in a bilateral form, offer encouragement to my belief that routine mastectomy for chronic mastitis—a policy equally distasteful to patient and surgeon—can be safely rejected in favour of *x*-ray treatment followed by periodic examination, with mastectomy in reserve if danger signals show themselves.

If I have described these cases at length it is partly because close personal observation of such a group over such a long period is perhaps unique, but mainly because in these histories the whole important question of the prevention of breast cancer is involved. To avoid a running commentary upon the case histories I here submit some general remarks upon the nature and treatment of chronic mastitis.

Clinical Characters of Chronic Mastitis

It is rare for the induration of chronic mastitis to affect the whole breast. The upper and outer quadrant of the breast is the seat of election, as for carcinoma, and the fact emphasizes the genetic link between the two conditions. The indurations of chronic mastitis affect the breast by lobes, and consequently, like the lobes themselves, they are sector-shaped, broader or narrower according to the number of adjacent lobes affected, often multiple in the same breast, and sometimes symmetrical in the two breasts.

For their appreciation a special technique of examination is necessary, resembling that of a cat treading its bed preparatory to lying down. A displacement of the swelling upon the pectoral, produced by alternate pressure of the two hands lightly laid upon the skin, enables its outline and character to be accurately determined as it slips to and fro under the fingers. Except in the cystic form of mastitis, it is not a defined lump but a finely granular induration. None of the signs of contraction or adhesion is present. The glands, if enlarged, are soft and often tender.

Chronic Mastitis—a Precancerous Condition

It is impossible within the scope of this paper to marshal the evidence that chronic mastitis tends to end in carcinoma. In my book (Handley, 1931) I believe I have proved that chronic mastitis and eventually carcinoma arise within local areas of lymph block in particular lobes of the breast. The lymphatic block results from lymphangitic surface infections, often unnoticed, of the main ducts near the nipple. A state of papillomatous hypertrophy within the smaller ducts is seen in the later stages of chronic mastitis, as Lenthal Cheatle showed, and this is the immediate precursor of carcinoma. All the stages of the process, from simple lymph stasis through chronic mastitis to early carcinoma, can often be demonstrated in the same breast.

Hormones and Chronic Mastitis

Normal physiology—the rapid development of the breasts at puberty and the recurrent monthly congestion and tenderness of the breasts just before each menstrual period—demonstrates the important influence upon the breast of the ovarian hormones. Lewis and Geschickter (1934) showed that the injection of oestrin into the breasts of male monkeys produced a feminine type of breast, a condition of gynaecomastia. Lacassagne (Cheatle, 1935), experimenting on young male mice, found that a course of oestrin injections produced in some weeks a cystic mastitis, terminating in carcinoma. Cramer and Horning (1936) showed that heavy doses of oestrin produce degeneration of the adrenals, together with an initial stimulation, followed by subsequent destruction, of the anterior pituitary. Quite recently they have found that these changes in the anterior pituitary produced by oestrin can be kept in check if the thyrotropic hormone of the anterior pituitary is injected in suitable doses. They further find that the administration of this thyrotropic hormone to females of a strain of mice in which half the females die of spontaneous mammary carcinoma affords apparently complete protection against the disease (Cramer and Horning, 1938). The therapeutic hint of this striking piece of work is obvious, but it will take some years to test the suggestion it contains. The lymph-stasis theory of chronic mastitis and cancer to which I have referred is perfectly consistent with the view that hormones play an essential part in the causation of these diseases. It is obvious that local areas of lymph obstruction must necessarily be areas where the hormone supply is defective, for the regular flow of the tissue fluid through these areas is more or less arrested. Hormones may fail to reach such areas, or may accumulate in them to excess. Lymph stasis supplies the localizing factor which determines the site where the cancer arises.

Treatment of Chronic Mastitis

It has been fashionable of late years to treat chronic mastitis empirically by oestrin. The experimental evidence just detailed would seem to show that the treatment is irrational, and possibly dangerous. I have recently seen a case of cystic mastitis in which the patient herself was convinced that her breast trouble dated from a course

of oestrin injections. Whether treatment with anterior pituitary thyrotropic hormone will succeed in preventing human cancer is a question yet to be decided. It may prove difficult, as in the case of tuberculin, to get the remedy to the actual seat of the disease. Meantime we have at our disposal a method of proved value.

X-RAY TREATMENT

In 1910 I advocated the *x*-ray treatment of chronic mastitis, and ever since, in hundreds of cases, I have advised its use instead of mastectomy, with good results. Pain promptly disappears, and in a few weeks obstinate mastitic indurations often completely vanish. The proof that by this treatment many breast cancers have been prevented is naturally very difficult, but the evidence, which I reserve for another paper, raises a presumption that such is the truth.

Danger Signals in Chronic Mastitis

The characters of chronic mastitis in young women have just been described. As the cancer age approaches, the disease may show one or more of the following danger signals, all of them dependent upon the formation of adventitious fibrous tissue in the affected lobe or lobes. These signs cannot here be described in detail. They are:

NIPPLE CHANGES

1. Retraction of one or more of the duct orifices upon the nipple, without retraction of the nipple itself.
2. Serous or blood-stained discharge from the nipple.
3. Deviation of the axis of the nipple.
4. Elevation of the nipple.
5. Appearance upon the nipple of white or black dots from which plugs of degenerate epithelium can sometimes be squeezed.
6. Flattening of the nipple.
7. Retraction of the nipple.

BREAST CHANGES

1. Appearance of multiple hard, elastic, or fluctuant lumps in the mastitic area (cystic mastitis).
2. The presence near the nipple in the mastitic area of radiating tortuous cords which are thickened main ducts.
3. Adhesion of the breast to the skin or the pectoral fascia is rarely seen except in fully developed carcinoma.

Case Histories

The case histories, subsequently to be given in detail, are summarized in the following table:

	Date of Birth	Right Breast	Left Breast	Result
Sister A	1871	Mass appeared in 1930 just before death. (Second primary carcinoma)	Primary carcinoma, 1919. (Radical mastectomy)	Died 1930 with signs of pyloric obstruction due to a primary gastric growth or to secondary abdominal masses
Sister B	1875	Primary carcinoma, 1925. (Radical mastectomy)	Primary carcinoma, 1937. (Radical mastectomy)	Alive and well, 1938
Sister C	1879	Proliferative mastitis and incipient carcinoma, 1933. (Simple mastectomy)	Proliferative mastitis, 1930. (Simple mastectomy)	Alive and well, 1938
Sister D	1885	Mastitic induration, 1930. (Surface radium treatment)	Mastitic induration, 1929. (*X*-ray treatment)	Alive and well, with normal breasts, 1938
Sister E	1886	Second primary carcinoma, 1927. (Radical mastectomy)	Primary carcinoma, 1923. (Radical mastectomy)	Died in 1932 of recurrence in supraclavicular glands, sternum, and spine

SISTER A; BORN 1871; UNMARRIED

In 1919 I operated upon this patient for a carcinoma in the lower outer quadrant of the left breast. The growth had been present since 1918, was 2½ inches in diameter, and was adherent to skin and muscle, though clinically the axillary glands were not enlarged. Microscopical section showed a regular spheroidal-cell carcinoma with considerable tubule formation, but the axillary glands were free from growth.

She remained in good health until 1929, when she began to suffer from arthritis of the spine and hip. Radiographs showed no evidence of secondary bone deposits. In November of the same year I again saw her; she was then suffering from a neoplasm of the stomach, with pyloric obstruction. Her condition was hopeless and did not admit of radiography of the stomach. It was impossible to say whether the neoplasm was primary or secondary. She died in January, 1930; her doctor, Dr. A. M. Barlow, reported that a few weeks before death a lump (? a second primary carcinoma) appeared in the right breast.

On the whole it appears likely, since her mother possibly and her grandmother probably died of gastric carcinoma, that death was due to a primary neoplasm of the stomach.

SISTER B; BORN 1875; MARRIED

The patient was first seen in 1920. She had had an abscess in the left breast after a miscarriage, and a narrow sector-shaped mastitic induration containing two small nodules, thought to be cysts, was found above and internal to the nipple. The left nipple was elevated, but in view of the history of abscess the importance of this sign was minimized. The right breast was normal. I asked to see her in six weeks' time, but it was not until 1925 that she again appeared, with a typical carcinoma of the right breast. Vague induration could be felt in the left breast at the site of the cysts, but it was otherwise normal. A right radical mastectomy was done, and microscopical examination of the specimen showed a carcinoma with no involvement of the axillary glands.

In 1927 she was well, but a thickened duct could be felt a short distance above the left nipple. Deep *x*-ray and surface radium treatment was given during 1927 and 1928. In 1930 a precautionary left mastectomy was advised, but the patient declined operation, and another course of deep *x*-ray treatment was given. In 1934 thickened ducts had again appeared, and operation was urged but without success.

In 1937, five years after the last *x*-ray treatment, a hard lump adherent to the skin appeared in the upper and outer quadrant of the left breast just outside an area of *x*-ray telangiectasis present above the nipple since 1931. Mr. Turner Warwick performed a radical mastectomy, and pathological examination showed a cellular spheroidal-cell carcinoma without axillary gland invasion. The patient made a good recovery from the operation and is at present well. It is interesting that the carcinoma appeared outside the area of telangiectasis. I have never seen a carcinoma develop beneath such an area, but I can recollect at least one other case in which a carcinoma appeared just beyond the margin.

The history of this case shows that the protection against carcinoma afforded by *x* rays is not absolute and permanent. It also emphasizes the need for three-monthly or six-monthly re-examinations of the abnormal breast, and for repeating the *x*-ray course at least every two or three years. It is to be noted that the breast was watched and treated for fourteen years before its removal was urged, and that frank carcinoma did not supervene until three years later. This is prima facie evidence that it is possible to distinguish the onset of the dangerous stage of chronic mastitis.

SISTER C; BORN 1879; MARRIED

In 1927 this patient was sent to me by Dr. Barlow for pain in and under the left breast. She had cardiac weakness and irregularity following influenza, with a bruit over the lower sternum, and was subject to indigestion. All remaining teeth had been extracted a year before.

On examination a sector-shaped mastitic induration was found in the upper quadrant of the left breast. In it near the nipple could be felt tortuous thickened ducts. The left nipple was higher than the right and pointed forwards and outwards, while the right pointed normally—that is, forwards, outwards, and downwards. Owing to these signs I regarded the breast as a dangerous one, but in view of the cardiac condition *x*-ray treatment was advised in preference to mastectomy. A month later the left breast appeared almost normal, except that some thickened ducts persisted above the left nipple. On this occasion some thickened ducts were felt above the nipple of the other (right) breast. In June, 1928, both breasts were much improved. In May, 1930, there was a slight duct thickening above the left nipple, and further *x*-ray treatment was given to both breasts by Dr. Russell Reynolds. The left nipple was still raised and deviated.

In September, 1930, following a blow on the left breast, a small lump a quarter of an inch in diameter and adherent to the skin was found in the left upper and outer quadrant. I diagnosed carcinoma. The pathologist reported that the lump was a cyst and that the breast only showed chronic mastitis. A simple mastectomy was done. Re-examination of the slide has convinced me that the duct epithelium was in a precancerous condition.

In March, 1933, a mastitic swelling containing thickened tortuous ducts appeared above the right nipple, and I urged a simple mastectomy, with removal of the glands. This was done. The breast showed advanced fibrosis with microcystic distension of the smaller ducts and proliferation of their epithelium. At certain points the breast showed diffuse papillomatosis of the ducts, still innocent (Plate, Fig. 1). At one point there was seen a duct distended by epithelium, with definite infiltration of the surrounding tissues—an incipient carcinoma (Fig. 2). Glands were not infected. Subsequently a course of *x* rays was given.

This case confirms the evidence of the preceding one as to (1) the controlling power of irradiation in chronic mastitis; (2) the need for periodic examinations in such cases; (3) the value of the danger signals which herald approaching malignancy.

SISTER D; BORN 1885; MARRIED, WITH TWO CHILDREN

The patient first presented herself in 1929 because of discomfort and pain in the left breast of twelve months' duration. Examination showed a slight mastitic thickening in the upper inner quadrant of the left breast, which was tender. There were no other signs in either breast. The induration disappeared after a short course of *x*-ray therapy.

In 1930 an indurated area was noted in the region of the axillary tail of the right breast, but this also subsided under surface radium treatment. The breasts were normal when the patient was last seen in October, 1937.

SISTER E; BORN 1886; MARRIED

This patient was operated upon by me at the Middlesex Hospital in December, 1923, for an advanced carcinoma of the left breast when aged 37. Radium tubes were introduced in the upper intercostal spaces and a patch of radio-dermatitis developed a month later over the inner end of the third space.

She does not appear to have been seen again until September, 1927. At this time two patches of radio-dermatitis were present at the inner ends of the third and fifth left spaces. In the right breast in the upper and outer quadrant was a defined granular sector-shaped thickening, an area of chronic mastitis. The right nipple seemed less prominent than normal, and was flame-shaped in contour in the plane of the skin, with the point directed towards the mastitic thickening. There was no definite adhesion to the skin, but a very faint depression appeared over the induration when the breast was displaced. I advised removal of the right breast, but as an alternative, owing to the reluctance of her relatives, offered *x*-ray treatment, with re-examination in two months. The axillary glands were not enlarged. There was no recurrence on the left side. I wrote to her medical adviser, Dr. Barlow: "There seems to be some danger that this patch will develop into a carcinoma, and removal of the right breast would be a wise precaution, since the second breast in a patient who has had carcinoma is four times as likely to develop carcinoma as the breast of a normal woman."

By October, 1927, after one dose of deep *x* rays which gave her acute pain in the breast and made her ill for some days, the patient had made up her mind to undergo operation. A faint but unmistakable skin dimple could now be elicited over a small lump beneath the edge of the right great pectoral at the periphery of the breast. The mastitic swelling had become less definite, probably as the result of the *x*-ray dose. The flame shape of the nipple was still evident. A diagnosis of second primary carcinoma was made, and immediate radical operation was urged and performed. Histological examination showed a spheroidal-cell carcinoma, without invasion of lymph glands, considered to be a second primary carcinoma.

In June, 1928, she was free from recurrence though suffering from anginal attacks, but she then escaped from observation. In May, 1930, I was informed that she was having radium treatment for enlarged glands in the neck. A sternal recurrence was subsequently treated by buried radium. In 1932 spinal secondary deposits appeared, and she died in 1934, after being bedridden for two years.

In the history of this case the regrettably long intervals between examinations are to be specially noted.

Commentary

The history of this unfortunate family recalls the high incidence of breast cancer found in certain inbred laboratory strains of mice. Dr. W. E. Gye (1936–7) makes some interesting observations on these strains. He says:

"Inbred strains of mice are very useful in some branches of experimental cancer research. The discovery of the carcinogenic property of oestrone was made with such a strain, and the analysis of the chain of events which ends in malignancy of the breast is simplified by the use of pure strains of high and lower cancer incidence. But, as Dr. Cramer has pointed out, inbred mice are not normal animals, and in high cancer lines the clinical picture of cancer is distorted by the predominating influence of one aetiological factor—inherited susceptibility in a particular organ—to such an extent as to minimize the importance of other factors. Conclusions drawn from observations on such strains cannot, therefore, be applied without reserve to cancer of normal mixed stocks. In high cancer strains, for example, multiple tumours of the breast are of frequent occurrence, whereas in mixed stocks single tumours are the rule. If a cancer in a high strain is excised surgically, the animal, though cured of this particular tumour, is liable to develop a second or a third independent growth in another part of the same breast or in the breast of the opposite side. The inherited predisposition to cancer of the breast is not affected by the removal of the first tumour, and surgical treatment in these exaggerated artificial circumstances is ineffectual and appears to be irrational. In mice of mixed strains surgical removal of a tumour is not followed by the appearance of fresh independent new growths; if local recurrence takes place it is due to incomplete removal of the primary tumour. The differences between cancer in pure line strains and in mixed stocks may have their counterpart, exhibited less strikingly, in human surgery."

How far are these conclusions supported for human carcinoma by the facts I have related? The fact that three of the five sisters are still living, free from pain and from signs of recurrence, partly as the result of radical mastectomies for developed cancer, partly as the result of simple mastectomies for threatening precancerous conditions, shows that in the human race (which fortunately has only two breasts) surgical treatment may be worth

while, however strong the constitutional predisposition to breast cancer. Though I believe radiation to be a valuable prophylactic, it cannot in all cases be an efficient substitute for surgery; indeed, the impermanence of the protection it affords is manifest in the case records.

Dr. Gye's statement that "in mice of mixed strains surgical removal of a tumour is not followed by the appearance of fresh independent new growths" is far from being applicable in the ordinary case of human breast cancer with no specially strong family history. My experience is that I see an increasing number of cases of second primary carcinoma of the opposite breast. I hope to diminish that number in future by advising routine post-operative irradiation of the remaining breast, and by even more careful following up of cases.

Summary

This paper records the history of five sisters, descendants of a cancerous mother and grandmother, who have been under my observation for nineteen years. There is evidence that three of them have suffered from double primary carcinoma of the breast. One sister was treated by irradiation for bilateral chronic mastitis, which has not recurred. The remaining sister was treated for chronic mastitis by irradiation, at first with success, but after three years a left simple mastectomy seemed necessary, and three years later a right simple mastectomy. The right breast showed an incipient carcinoma. The danger signals which herald the onset of carcinoma in such cases are described, and it is held to be possible to distinguish between cases of chronic mastitis which may safely be treated by irradiation and cases in the precancerous stage needing mastectomy. Two of the sisters have died of breast cancer, surviving operation eleven and nine years respectively, and three remain well. Five radical mastectomies and two simple ones have been done.

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Dr. Henry Herd, school medical officer for Manchester, in his annual report for 1937, records the transfer to his department of a child guidance clinic which was formerly run on voluntary lines. The present tendency to make use of the school clinics for early consultation, in preference to awaiting the next routine visit of the medical officers, is shown by the rising ratio of "special" to "routine" inspections. During the year under review some 33,000 routine inspections were undertaken, as compared with nearly 49,000 special inspections. The nutritional grading required by the Board of Education was continued during the year. An analysis of the very different findings of a group of officers confronted with the same batch of children, the grading being based on general observation only, bears out Dr. Herd's view that the economic test, which reveals that a child can, or cannot, be receiving an adequate diet on the income available for feeding him, is still the only reliable and practicable method capable of application on a large scale to the assessment of nutrition. The scope of this report is as wide as ever, and it includes a paper on the physical fitness of schoolboys, with special reference to nutrition and the mechanism of heredity.

DYSFUNCTIONAL UTERINE BLEEDING TREATED WITH PROGESTERONE*

BY

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(WITH SPECIAL PLATE)

Although towards the end of last century it was suggested that irregular uterine bleeding was associated with abnormal ovarian function, it is only within comparatively recent times that this has been confirmed by scientific data. The dysfunctional nature of irregular uterine bleeding was disclosed when the endometrial structure and hormone findings in such cases were correlated with the endometrial changes and hormone concentrations occurring cyclically during the normal menstrual process. It is known that menstrual rhythm is founded on the harmonious interaction of the gonadotropic hormone of the anterior pituitary and the oestrogenic and luteal hormones of the ovaries. Several factors, however, particularly dysfunction of one or more of the other glands in the endocrine chain and abnormal nervous stimuli, may affect this intimate relationship.

The present communication records a study of thirteen cases of irregular uterine bleeding that was essentially associated with a disturbance of the pituitary-ovarian mechanism.

Types of Bleeding

Two types of bleeding only are considered—namely, "ovular" and "anovular."

Ovular Bleeding.—By this term is implied bleeding which may occur at or near the time of ovulation, about the middle of the cycle. This phenomenon, which has been noted by many observers (Hartman, 1932; Hain, 1934), is probably due to a disturbance of the hormonal equilibrium at the time of ovulation. In such cases it is presumed that between the time of rupture of the Graafian follicle and the formation of the corpus luteum there is a transient lowering of the blood concentration of oestrin. Consequent on the fall of blood oestrin there is diminished endometrial stimulation, which is sufficient to induce partial disintegration of the endometrium with bleeding. When the corpus luteum is mobilized, however, the endometrial stimulation is restored and the haemorrhage subsides.

Anovular Bleeding.—As distinct from anovular *menstruation*, this term is synonymous with that of metropathia haemorrhagica. The pathological findings in this condition are cystic degeneration of the Graafian follicles with no recent or forming corpus luteum in the ovary, myohyperplasia of the uterus, and marked proliferation of the endometrium with cystic dilatation of the glands (Plate, Figs. 1 and 5). The cells lining the glands are cubical, with centrally placed nuclei; no glycogen is found in the cells (Figs. 2 and 6). This characteristic pathological picture may result from (*a*) an upset in the pituitary-ovarian mechanism or (*b*) a local pelvic lesion interfering with the normal process of ovulation.

Mechanism of Bleeding

Ovular bleeding, it has been suggested, is associated with a lowering of the blood concentration of oestrin at

* A Report to the Therapeutic Trials Committee of the Medical Research Council. From Dr. Douglas Miller's Gynaecological Clinic, Royal Infirmary, Edinburgh, the Deaconess Hospital, Edinburgh, and the Institute of Animal Genetics, Edinburgh University.

the time of ovulation, and it is probable that a similar factor operates in metropathia haemorrhagica. Clinically and experimentally it has been demonstrated that endometrial stimulation can be maintained for long periods, provided an adequate amount of oestrogenic hormone is administered. The withdrawal of the hormone, however, is followed by endometrial disintegration. In metropathia haemorrhagica, therefore, there must be some factor which initiates a lowering of blood oestrin.

I have several times confirmed the observation made by many investigators that the large follicular cysts found in the ovaries in cases of metropathia haemorrhagica contain a fluid which has oestrogenic properties. There are therefore in these cases depots of oestrin in the ovaries which supply a continuous amount to the general circulation and thus endometrial stimulation is sustained. Gradual intracystic tension, however, may cause either atrophic changes in the secreting cells or compression of the blood vessels. Whatever the cause, the direct result is a reduction of the hormone passing into the general circulation. Although it was shown by Corner (1927) and Hartman (1932), and subsequently confirmed by others, that oestrin withdrawal causes uterine bleeding, it was not until Markee's (1936) experiments on monkeys were carried out that the mechanism of this phenomenon was demonstrated. He showed that diminution in the blood concentration of oestrin causes vasoconstriction of the endometrial capillaries. Consequent on this vascular spasm the nutrition of the highly proliferated glandular structure is impaired. Partial necrosis results, with consequent shedding of the endometrium.

Diagnosis

The history obtained in cases of anovular bleeding is characteristic. There is usually a period of six to ten weeks' amenorrhoea followed by prolonged bleeding of from four to eight weeks' duration. In cases of ovular bleeding there is a history of frequent loss, which in some cases occurs regularly every fourteen days. It is sometimes necessary to remove endometrium on several occasions in order to distinguish between the ovular and true menstrual bleeding. Although a diagnosis of these conditions may be made on clinical evidence, this should be confirmed by histological examination of the endometrium. In the early years of reproductive life a thorough examination of the genital tract, including measurement of the length of the utero-cervical canal and microscopical examination of the endometrium, furnishes information which is of value in determining the form of therapy most likely to be beneficial. This examination, including in particular biopsy, is essential near the menopause, as the possibility of carcinoma being the cause of the bleeding must always be excluded.

Treatment

Progesterone was the form of therapy used in the present investigation. Initially 1 to 2 mg. were given daily or every second day, but when more abundant supplies became available 5 mg. were given daily. In ovular bleeding the treatment was given two or three days before the expected anomalous bleeding, the aim being to maintain endometrial stimulation during the time of ovulation, and thus tide over the period when the blood oestrin was lowered. The administration of oestrin at this time, by preventing a diminution of blood oestrin, produces the same effect. As is known, however, oestrin at a certain concentration inhibits the anterior pituitary, and accordingly it is possible that this form of therapy may, by influencing the pituitary stimulus, delay or inhibit ovulation. Theoretically, therefore, the former method of treatment is preferable.

In metropathia haemorrhagica progesterone may be given at any phase. During the bleeding stage 5 mg. were administered daily until the bleeding was controlled. During the amenorrhoeic phase 5 mg. were given daily, the total dosage amounting to 25 to 30 mg. Though oestrin therapy may, by sustaining endometrial stimulation, control the haemorrhage in these cases, the effect is only a temporary one. Indeed, oestrin would only aggravate the condition, and its withdrawal would be followed by still more haemorrhage. Accordingly, this form of therapy is definitely contraindicated.

Data and Results

Thirteen patients were treated with progesterone; five were cases of ovular bleeding and seven of anovular bleeding, whilst one case, though treated with progesterone, was found to come under another category.

Ovular Bleeding.—As the result of treatment three patients have had regular menstruation for the last eighteen to twenty-two months. One patient, studied over a period of eighteen months, had three regular periods after cessation of therapy. She then became pregnant, but aborted at the end of the second month of gestation (Chart I). The other patient, though not completely well, has now only a brownish discharge, whereas formerly she had frank haemorrhage for a few days between every two periods.

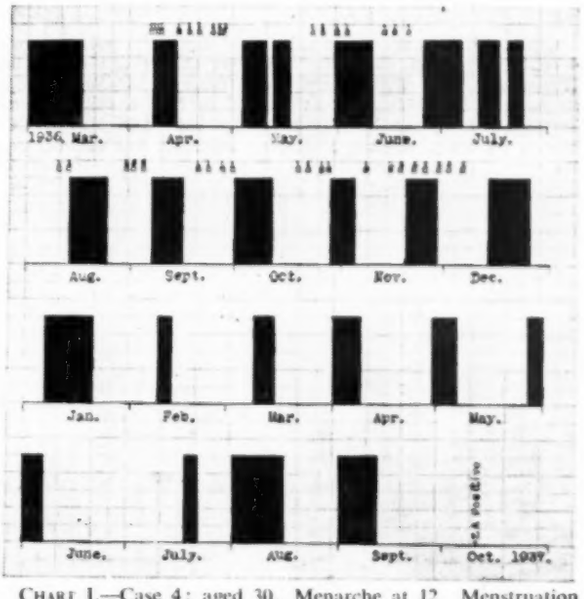

CHART I.—Case 4; aged 30. Menarche at 12. Menstruation regular 7-8/28 until the age of 25. Since then menstruation has been irregular 7-21/17-21. Biopsy curettage carried out on two occasions indicated that ovulation was occurring but was associated with bleeding. The chart indicates the effect of treatment. Doses of progesterone were given on the following days: 1936, April 7, 8, 9, 10, 15, 18, 21, and 25, 1 mg.; April 27 and 28, 2 mg.; May 24, 27, and 31 and June 3, 14, 17, and 21 and August 10 and 13, 1 mg.; August 30 and September 1 and 4, 5 mg.; September 20, 23, 27, and 30 and October 19, 22, 26, and 28 and November 8, 1 mg.; November 15, 18, 22, 25, and 29 and December 2 and 6, 2 mg.

Anovular Bleeding.—In four cases of anovular bleeding menstruation became normal in duration and periodicity. In two cases, however, there has recently been a recurrence of the irregularity. This has been attributed by one patient to a "nervous turn" following the sudden death

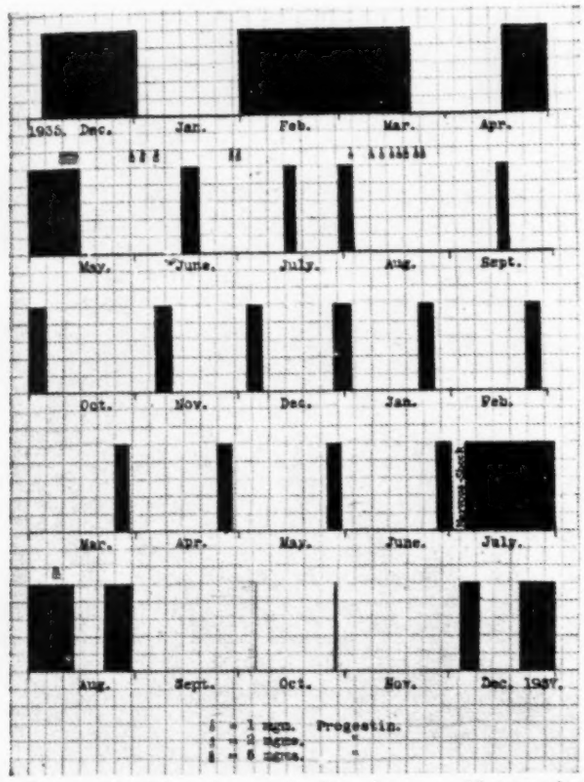

CHART II.—Case 6; aged 31; 2-para. Menstruation 4-7/21-28-day type since the menarche at the age of 13 till December, 1935, when period lasted from December 5, 1935, to January 1, 1936. After an interval of four weeks, bleeding began again in the beginning of February and lasted until March 23, 1936, when a diagnostic curettage was carried out. Basal metabolic rate + 7 per cent. Blood-sugar tolerance: 88 mg. per 100 c.cm.: after 50 gm. glucose, 100, 119, 99, 90, and 90 mg. per 100 c.cm. The diagnosis of metropathia haemorrhagica was confirmed by histological examination of the endometrium. Doses of progesterone were given on the following days: 1936, May 10, 11, 12, 13, and 14, 2 mg.; May 31, 1 mg.; June 3, 7, and 29 and July 1, 2 mg.; August 3, 9, 12, 15, 17, 19, 22, and 24, 1 mg.; 1937, August 8, 2 mg.; August 9, 1 mg.

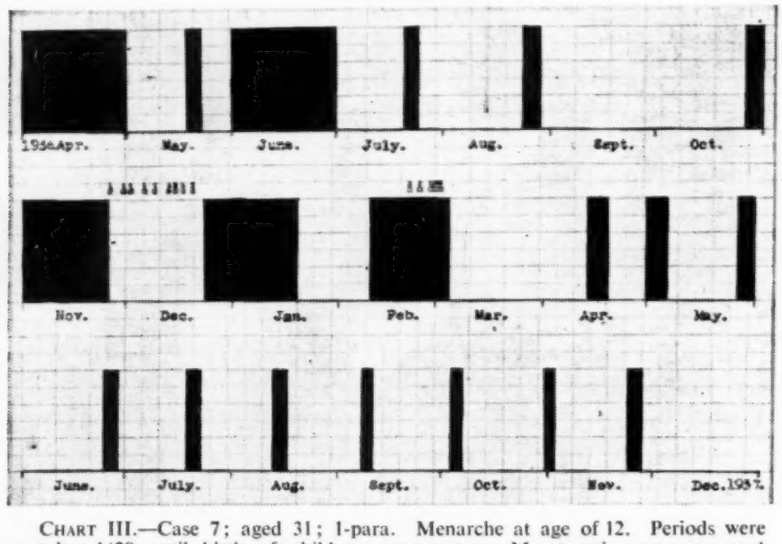

CHART III.—Case 7; aged 31; 1-para. Menarche at age of 12. Periods were regular 4/28 until birth of child two years ago. Menstruation recommenced three months after the birth and was regular 4/28 until April, 1936. The diagnosis of metropathia haemorrhagica was confirmed by histological examination of the endometrium removed on April 30, 1936. Doses of progesterone were given on the following days: 1936, November 26 and 30 and December 2, 6, and 9, 1 mg.; December 13, 15, 17, and 20, 2 mg.; 1937, February 21, 24, and 27, 2 mg.; February 28 and March 1 and 2, 5 mg.

of a near relative; while in the other case the patient sustained a shock on falling off a bus (Charts II and III). In the remaining three cases the uterine endometrium was examined histologically before and after treatment, and it is of interest to note that as a result of the treatment the hyperplastic endometrium has been changed into a pseudo-secretory phase in two of the cases (Figs. 3, 4, 7, and 8). These cases have only recently been under treatment, and two have had two normal periods, whilst the third has had one normal period.

On the other hand, the following case illustrates the wasteful aspect of the indiscriminate use of endocrine therapy for irregular uterine bleeding.

Case 13.—This patient, aged 13, was first seen on August 12, 1936. Menstruation started in February, 1936, and her periods were as follows: the first period lasted five days; the second period, five weeks later, lasted seven days; the next period, one month later, lasted a similar time; the period in May lasted seven days; two periods in June lasted seven days; a period started on July 4, 1936, and continued until the patient was seen on August 12. Thyroid therapy had no effect on the bleeding. Between August 12 and 17 the patient had 10 mg. of progestin. Bleeding stopped on August 28, but restarted on September 3 and lasted nine days; it was again present from September 24 to October 3 and came on once more on October 12. Between October 19 and 26 the patient had 35 mg. of progestin, which did not control the bleeding. Examination under anaesthesia on October 31 showed that the uterus was small, the utero-cervical canal measuring only two inches. Thereafter she was put on progynon B oleosum forte (oestradiol benzoate), and after a total dosage of 45 mg. menstruation came at regular intervals for five days and has continued to do so.

I have indicated that the progesterone treatment in this case was indiscriminate. If the patient had been examined initially under anaesthesia and the hypoplasia of the uterus detected progesterone would not have been given, as it would have had no effect on an endometrium which had not been sufficiently primed with oestrogenic hormone.

Discussion

The histological appearances of the endometrium before and after the administration of progesterone are significant, in that they demonstrate clearly the effect of this hormone on the endometrium. If this were the only action produced, however, this therapy would be of little value, as its effect would be merely a local and temporary one. I have shown that progesterone therapy, in some cases of metropathia haemorrhagica, was followed by a normal menstrual rhythm. This result, it is presumed, has been due to a re-establishment of a normal hormonal balance. The rationale of this form of therapy is possibly as follows: the progesterone brings about an increased elimination of oestrin by urinary excretion or converts it into less physiologically active fractions (Smith, Smith, and Pincus, 1938). This results in a lowering of the blood concentration of oestrin to within normal limits; following upon this, that inhibition of the pituitary which has been associated with a high concentration of oestrin is removed. The pituitary can now act at a normal level. A full

reactivation of ovarian function restores the normal hormonal balance, a continuation of which effects the regular menstrual rhythm.

Comparatively few favourable results will follow the indiscriminate use of progesterone therapy, but in cases where its employment appears to be indicated by the histological structure of the endometrium encouraging results can be obtained. Although radium therapy is successful in the treatment of metropathia haemorrhagica occurring at or near the menopause, a wider use of progesterone seems to be indicated as a more rational form of treatment.

Summary

1. Two types of irregular uterine bleeding are described.

2. The mechanism of bleeding in metropathia haemorrhagica is discussed.

3. The results of treatment with progesterone are given, and the effect of this form of therapy on the uterine endometrium is illustrated by photomicrographs.

4. The rationale of progesterone therapy in irregular uterine bleeding is discussed.

I wish to express my indebtedness and thanks to Dr. Douglas Miller for the privilege of investigating and treating cases under his care, and to Professor F. A. E. Crew for the facilities afforded me in his department.

The preparation of progesterone used in this investigation was progestin organon, and I am grateful to the manufacturers (Messrs. Organon Laboratories), who supplied it to me through the Therapeutic Trials Committee.

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BRODIE'S ABSCESS AND ITS DIFFERENTIAL DIAGNOSIS*

BY

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(WITH SPECIAL PLATE)

In the collected works of Sir Benjamin Collins Brodie, published in 1865, will be found a paper on "Chronic Abscess of the Tibia" which was presented to the students of St. George's Hospital. In this paper he pointed out that an abscess may occur in the interior of any bone in the body, but according to his experience we meet with it more frequently in the tibia than in any other bone. He gives a brief account of eight cases. All the patients except one were males between the ages of 13 and 34 years. The abscess was in the upper third of the tibia in four and in the lower third in four. The clinical histories indicated that the lesion had existed for periods ranging from five to eighteen years. The account of his first case is as follows:

Some Early Cases

"It was as long since as the year 1824 that I was consulted by a young man, 24 years of age, under the following circumstances. There was a considerable enlargement of the lower end of the tibia, but the ankle-joint permitted of every motion and was apparently normal. The skin was thin, tense, and closely adherent to the periosteum. There was constant pain in the part, generally of a moderate character, but every now and then it became excruciating, keeping the patient awake at night and confining him to the house for many successive days. It made his life miserable and his nervous system irritable: one effect of which was, that it spoiled his temper, and thus produced another set of symptoms in addition to those which were the direct consequence of the local malady. The disease had been going on for twelve years. He had consulted many surgeons respecting it, and had used a great variety of remedies, but had never derived benefit from anything that was done. Instead of getting better, he every year became so much worse. I tried some remedies without any advantage, and at last recommended that he should lose the limb. Mr. Travers saw the patient with me, and agreed with this opinion. Amputation was performed: and the amputated tibia is now on the table. You will see how much the lower end of it is enlarged, and that the surface of it presents marks of great vascularity. The bone in the preparation is divided longitudinally, and just above the articulating surface there is a cavity as large as a chestnut. This cavity was filled with dark-coloured pus. The inner surface of it is smooth. The bone surrounding it is harder than natural. On observing these appearances, I could not help saying that if we had known the real nature of the disease the limb might have been saved."

In another paper he tells us that the patient died a few days after the operation. The other seven patients he treated by trephining the bone at the site of the point of maximum tenderness, and the release of pus relieved the symptoms and led to rapid cure.

In addition to the signs and symptoms recorded in the account of the first case the following are recorded in the other histories.

"The pain may be of moderate character with periodic exacerbations of excruciating almost intolerable pain and periods of perhaps several months of freedom from all symptoms. The adjacent joint may exhibit periodic effusions after exercise which are absorbed with rest. One patient had tubercles in the lungs and vomicae, dead bone in the ribs, and other complications. In one case a sinus communicated with the knee-joint. The new periosteal bone is softer than normal."

Such is the account that Brodie gave to a condition which he recognized as a distinct entity. The accuracy of his observations and the value of the method of treatment which he devised were such that though thousands of such cases have been treated by hundreds of different surgeons since his time little if any addition has been contributed to the clinical picture.

What Constitutes a Chronic Abscess?

Brodie's clinical work was unaided, or, as some would express it, unhampered, by bacteriology or radiology. It is therefore impossible to define accurately in the present terms of bacteriology or radiology the nature of the lesion which he described. Though in the light of our present knowledge most of his eight cases appear to be of a staphylococcal nature, the history of at least one of them suggests the possibility of a tuberculous infection. Consequently, though we may reasonably refer to any chronic abscess of bone as a Brodie's abscess, it would be preferable, from the point of treatment, to confine the term to abscesses that are due to the staphylococcus. These constitute all but a relatively small minority that are attributable to the tubercle bacillus, typhoid bacillus, pneumococcus, streptococcus, etc. We are also faced with the question of what constitutes a chronic abscess? Brodie stated that the duration of symptoms in his eight patients varied from five to eighteen years. To-day, with the ready accessibility of the harmless and painless radio-

* Paper read at the Annual Meeting of the British Association of Radiologists at Belfast, May 13, 1938.

graphic examination, such lesions may be detected very early in the course of the disease, and what might in Brodie's day have been allowed to progress for some years before surgical intervention was made is now capable of detection and treatment within a month or so of its onset. For the purpose of this paper I have examined the old radiographs and case histories, and made recent clinical and radiographic examination, of as many as were available of the sixty-two cases of chronic bone abscess which have been submitted to me from time to time during the past fifteen years. The results are shown in the following table:

Table summarizing the Main Features of 62 Cases of Chronic Abscess of Bone (42 males; 20 females)

Years:	Age Period at which Abscess was found						
	1-5	6-10	11-15	16-20	21-30	31-40	40+
Number of cases	6	5	19	15	10	5	2
Duration of signs and symptoms at time radiographic evidence was obtained	1 wk. to 6mths.	3mths. to 6mths.	3mths. to 5 yrs.	3 yrs. to 11 yrs.	1 yr. to 20yrs.	1 mth. to 30 yrs	

Site of Primary Bone Focus							
Tibia			Femur	Humerus	Ulna	Radius	Fibula
Lower end	Upper end	Mid. third					
29	9	2	8	7	4	2	1

Single focus in bone, 45 cases. Multiple bone foci, 17 cases.

Analysis of the Cases

Analysing this table, we see that the lesion occurred twice as often in the male as in the female. The majority—that is, forty-four—occurred in the age period of 11 to 30 years. The younger the patient the shorter was the duration of symptoms, though in a few isolated cases, even in adult life, a brief history only was obtainable. In those cases with a long history, starting in some instances in the early years of life, the symptoms had been intermittent; attacks of pain and swelling were followed by long periods during which there was almost complete freedom from symptoms, and it is probably due to this that the lesion was not submitted to radiographic examination. Of the six children under the age of 5 who developed signs and symptoms severe and protracted enough to cause the doctor to seek radiographic examination the lesion in five of them appeared to be due to secondary tuberculous infection.

In some cases radiographic evidence of a septic focus in bone was obtained within a month of the patient complaining of symptoms, but since we are unable to fix the date of invasion of the site by infective organisms from the patient's story we obviously cannot, in the majority of cases, say how long such a lesion has been present. The intelligence of patients, their reaction to pain and discomfort, and their resistance to infection vary considerably, and so does the virulence of the invading organisms. The physical signs also do not materially aid us in our estimation, for even in acute osteomyelitis swelling of the affected limb and redness of its skin are relatively late signs. In the case of the chronic lesion these signs appear intermittently, and though there may be long intervals during which little can be detected, these intervals tend to diminish as the signs become more prominent and intensive.

Upwards of a third of the total number of abscesses were found in the lower end of the tibia. This is in opposition to the findings recorded by other workers in acute osteomyelitis of childhood, when the upper end of the tibia was more often involved. Except in a very few instances the primary lesion was seen to be in the metaphyseal extremity of the diaphysis, and by the aid of serial radiographs it was observed that the lesion extended from this site towards the medulla and rarely perforated the epiphyseal joint cartilage. In those instances in which the latter occurred the tubercle bacillus was found to be the infecting organism.

In the majority of cases the periosteum did not show any evidence of reaction, but when the abscess was large and involved the whole extent of the diaphyseal extremity periosteal new bone was evident. This distribution and suggestion of spread of infection is in opposition to the views put forward by Starr with regard to acute osteomyelitis. He produced evidence to show that the infection passes from the metaphysis to the periosteum, stripping the latter from the bone by the formation of a subperiosteal abscess and subsequently infecting the medulla via the Haversian canals. In these cases of chronic bone abscess I am unable to obtain any radiographic evidence of infection of the bone via this route. In nearly one-third of the cases the patients either exhibited evidence of previous septic bone foci or subsequently developed such lesions, while others gave a history of tonsillitis, pneumonia, empyema, etc. The duration of the lesion in most cases was so long that the early events in its history were not well remembered, but in no fewer than eight instances there was definite evidence of severe injury to the part preceding the development of symptoms. In some cases the symptoms and signs produced by the trauma passed imperceptibly into the symptoms and signs which have become associated with the bone abscess.

Many of the patients gave a history of having had scarlet fever, measles, and other exanthemata, and in some cases the lesion in the bone developed during or shortly after the infectious illness. In two cases a history of typhoid fever was obtained, and the organism was recovered from the abscess. As in acute osteomyelitis, the infecting organism found in the majority of the cases was the *Staphylococcus aureus*.

Physical Signs and Symptoms

The chronic abscess has an insidious onset, quite distinct from acute osteomyelitis, in which the striking clinical features are the sudden onset of severe or even excruciating pain and the development of a point of exquisite tenderness over the primary focus—which the patient guards with fear—associated with rigors, high fever, and rapid pulse, followed by the signs of a severe toxaemia, delirium, and coma. The patient may complain of recurrent attacks of pain which have gradually increased in severity. The pain is often of a boring or burning character, giving the impression of a gradual expansion of the bone from some internal compression, and at times it may be almost intolerable. Some patients complained that it was worse during the day when they were walking about, but that it became less on resting and at night. In these cases the affected limb usually became somewhat swollen, the skin reddened, and there was evidence of oedema of the soft tissues over the affected bone during the day, which subsided during the night. In others the pain appeared to be worse at night, none being experienced during the day until resting in the evening. Attacks of pain of a more severe nature lasting three or four days were followed in some instances by months of freedom. In most cases there was tenderness on pressure over the abscess. In the most acute phases the patient may show a hot, red, tense, fluctuating

swelling, with some oedema of the affected limb. The adjacent joint at such phases sometimes became swollen and showed signs of effusion into the joint. In a few cases superficial abscesses developed and discharged, and sometimes definite thickening of the affected segment of bone could be observed.

Radiographic Signs

ACUTE OSTEOMYELITIS

Radiographic evidence of acute osteomyelitis for the purpose of diagnosis does not exist. By the time the bone shows changes detectable by radiography the shaft will have been denuded of periosteum and sequestra have formed. From radiographic examination of septic fingers in which the date of onset can be more accurately fixed I have determined that changes may be found in the affected bones within ten days. The earliest sign is localized osteoporosis. When the focus is situated in the medulla absorption of the cancellous structure may be evident. In less acute lesions no apparent change may be seen for one or two months, though there may be highly suggestive clinical signs and symptoms. In a patient aged 32, who had complained of pain in his leg for one month, radiographs revealed a well-defined area of cancellous destruction in the medulla of the tibia at the junction of the middle and upper thirds, with some increased density of the surrounding cortex.

SUBACUTE OSTEOMYELITIS

In subacute osteomyelitis physical signs and symptoms precede the development of radiographic signs by a week or more. Thus in a girl (D. V.) aged 10 years radiographs taken one week after the onset of pronounced physical signs and symptoms showed a small ill-defined area of osteoporosis at the lower metaphyseal extremity of the tibial diaphysis, but a month later radiographs revealed irregular osteolysis of the whole of the lower third of the tibial diaphysis, including its compact cortex, and an accretion of new periosteal bone, which in places also exhibited calcium deficiency. It was impossible to define the boundaries of the infected bone. Further radiographs after another month showed that calcium had been deposited, and there was now increased definition in the affected zone, evidence of consolidation and localization of the process, and more regular ossification of the new periosteal bone. No evidence of sequestra formation could be found.

CHRONIC BONE ABSCESS

The chronic bone abscess at the diaphyseal extremity in the patient whose epiphysis has not yet fused is revealed on the radiograph by an area of cancellous destruction extending from the epiphyseal growth cartilage towards the medulla. Its boundaries are not sharply defined, but they are perhaps rendered more apparent because the adjacent bone has an increased density. Frequently the lesion is spatulate in form, and even with five years' history may be less than a quarter of an inch in thickness but extending an inch or more from the epiphyseal line towards the medulla. The more acute the abscess the larger the cavity formed and the less defined are its boundaries and the greater the probability of new periosteal bone accretions. As the lesion increases with age its boundary wall tends to become more sharply defined and sclerosed. In one patient aged 21, who gave a history of a lesion of seventeen years' duration, the radiograph showed an abscess with a sharply defined regular wall, which was little more than a quarter of an inch in diameter, extending from the subarticular surface of the tibia for one and a half inches towards the medulla. (See Fig 3, Special Plate.) In patients above 20 years of age who give a history suggesting the beginning of an abscess about the age of 14 the radiographs may show the abscess to be about an inch above the ossified epiphyseal growth cartilage.

It is rare for the growth cartilage to be penetrated by staphylococcal infection and the epiphysis eroded; consequently, though the joint may exhibit periodic effusion, it is rare for it to be infected by extension; but after the epiphysis has fused the lesion may be extended into the epiphyseal area and even infect the joint. No evidence of accretion of new periosteal bone may be found even after the abscess has existed many years; thus, in one of seventeen years' duration no thickening was apparent, and consequently no swelling was detectable on clinical examination. However, in those cases in which the abscess has involved most of the diaphyseal extremity an accretion of new periosteal bone will be shown. No sequestrum is to be observed within the abscess cavity except in those cases that have been subjected to surgical intervention, as the abscess extends by the gradual absorption of the adjacent bone.

Much less common than the abscess in the metaphyseal region is the abscess in the middle third of the shaft of a long bone and beneath the periosteum.

MEDULLARY ABSCESSES

An abscess in the medulla of the middle third of the shaft of a long bone is recognized from its radiographic appearances. The shaft in the area shows a spindle-shaped expansion or thickening. In the middle of the

LEGENDS FOR RADIOGRAPHS IN SPECIAL PLATE

FIG. 1.—Radiograph of G. J., a youth aged 15, showing subacute abscess in lower end of diaphysis of tibia. Duration of symptoms five months. Note ill-defined area of central cancellous destruction with increased density of the adjacent bone and accretions of new periosteal bone. A radiograph taken six years after evacuation of abscess showed linear outline of cavity in lower third of diaphysis but no evidence of reaction in the adjacent bone or periosteum. Clinically cured.

FIG. 2.—Radiograph of Mr. D. E., aged 21, showing chronic abscess in lower third of tibia three-quarters of an inch above line of epiphyseal growth cartilage. Note marked increase in density of surrounding bone. Duration of symptoms five years.

FIG. 3.—Radiograph of Mr. S. B., aged 21, showing chronic abscess in lower end of tibia which has extended to subarticular bone, the epiphyseal growth cartilage having disappeared. Duration of intermittent symptoms seventeen years. Note well-defined outline of sclerosed wall of abscess and absence of periosteal reaction.

FIGS. 4 and 5.—Antero-posterior and lateral radiographs of Miss E. M., aged 14, showing chronic abscess in lower end of tibial diaphysis. Duration of symptoms five years. Note well-defined wall of abscess.

FIG. 6.—Radiograph of Miss E. M. ten years after biopsy, which failed to reveal abscess. Compare with Figs. 4 and 5. Note drill-hole in bone (made ten years previous to this radiograph being taken) is away from site of abscess, but resolution of the infected area has largely occurred.

FIG. 7.—Radiograph of D. C., aged 3, showing abscess involving the epiphysis. Duration of symptoms one month. Tuberculous.

FIG. 8.—Radiograph of P. P., aged 6, showing tuberculous abscess which has involved the epiphysis. Duration of symptoms several months. Tuberculous.

FIG. 9.—Radiograph of Miss E. H., aged 24, showing chronic abscess in femoral shaft. Duration of symptoms fourteen months. History of typhoid fever. Typhoid bacillus removed from pus.

expanded segment a well-defined rounded or ovoid area of cancellous destruction—the abscess cavity—is seen. This area is surrounded by a thick wall of dense compact bone, which appears to obliterate the medullary cavity above and below the abscess cavity. Surrounding the thickened abscess wall, evidence of activity is indicated by the thin regular layer of new bone that is being added beneath the periosteum. Following successful surgical evacuation of the abscess cavity the bone assumes its normal compact and cancellous proportions, the reactive periosteal bone being absorbed.

PERIOSTEAL ABSCESSES

When the lesion develops as a localized abscess there is present beneath the periosteum a localized fusiform thickening of the bone, which is due to the laying down of additional subperiosteal compact bone, in the thickest part of which a well-defined rounded abscess cavity will be seen.

Radiographic Localization of the Abscess

In these days, when lesions of bone can be accurately localized by radiography, this should be done before any surgical intervention takes place ; for, as already indicated, the abscess is usually but a narrow track that may easily escape the surgeon's weapons and thus permit the recording of one more radiographic fallacy. Two radiographs (Figs. 4 and 5, Special Plate) reveal such an abscess which eluded the surgeon's search. It is interesting, for it shows that, while the abscess was not discovered by the trephine, the lesion resolved, though the scar of the trephine hole has persisted for over ten years (Fig. 6, Special Plate). Localization of the lesion, followed by the marking of the skin indicating its site, would enable the surgeon infallibly to expose the lesion in the minimum of time.

Results of Surgery on Radiographic Appearances

Serial radiographs of the bone from which an abscess has been evacuated show that the cavity may persist for many years. One, two, or three years afterwards the walls of the cavity are not sharply defined and present a radiographic picture which has been mistaken for that of an active abscess. And as it is not uncommon for a patient to have occasional bouts of pain or discomfort, with undue redness of the area over the site of the old abscess, particularly if he has an injury to the part, it is imperative that this possibility be realized, otherwise an active abscess may be diagnosed and a useless operation be performed. At this operation no abscess will be found, and histological examination of material removed will indicate the reaction of trauma. A few days' rest results in disappearance of these clinical signs, though the radiographic appearance remains. While little radiographic evidence of the abscess site may be found after two or three years, in some cases even after twenty years the walls of the cavity made by the surgeon may be observed. Such old scars in bone are clearly defined with linear contours, and present no evidence of reaction in the surrounding bone. After the effective evacuation of an abscess which was associated with definite accretions of new periosteal bone the latter is soon absorbed, and in a few months no trace of it can be found. This is an additional feature useful in the recognition of the evacuated abscess.

Differential Diagnosis

There is perhaps no lesion in which the clinical history of the patient is more helpful in diagnosis than the Brodie abscess, and in introducing the question of differential diagnosis I cannot do better than quote Brodie's own words. He asks:

"What are the circumstances that would lead you to suspect the existence of abscess in the tibia? The answer is, When the tibia is enlarged from a deposit of bone externally: when there is excessive pain, such as may be supposed to depend on extreme tension, the pain being aggravated at intervals and these symptoms continue and become still further aggravated, not yielding to medicines or other treatment that may be had recourse to, then you may reasonably suspect the existence of abscess in the centre of the bone."

The clinical history will indicate the age of the lesion and the existence of any previous septic focus or infection likely to be associated with bone abscess. Such information is invaluable in view of the fact that lesions of a widely different significance produce radiographic appearances which are rather alike. Such lesions are tuberculous abscess, gumma, simple bone cyst, sarcoma, and endothelioma.

TUBERCULOUS ABSCESS

In this series of cases five of the six children under the age of 5 years who presented a lesion of the bone so intractable that radiographic investigation was sought had a tuberculous abscess which was associated with some typical lesion in another part of the body. The tuberculous abscess does present certain features which assist in identification. Mention has been made of the fact that the tuberculous process does not appear to be checked by the growth cartilage at the metaphysis and prevented from invading the epiphysis, as is the usual feature of the staphylococcal abscess (Plate, Figs. 7 and 8). The early tuberculous bone abscess is a regular rounded excavation with clearly defined walls, for the effect of the organism is the solution of the bone against which it comes into contact without any apparent reaction, such as osteoporosis or osteosclerosis in the adjacent healthy bony wall. After an interval of some months general decalcification of the involved bone occurs, and then an ill-defined sequestrum of somewhat greater density than the neighbouring bone may be recognized.

GUMMA

Gumma of the bone is usually identified by the massive reaction it produces in the adjacent bone. This finding should indicate the need for obtaining the Wassermann reaction. Evidence of other syphilitic lesions may be forthcoming.

SIMPLE BONE CYSTS

The commonest sites for such lesions are in the neighbourhood of the great trochanter of the femur and the middle third of the shaft of the humerus and the lower third of the radial diaphysis. In these sites the bone is expanded. The expanded area is ovoid, cyst-like, and devoid of cancellous trabeculae. Its boundary is but a thin wall of bone, which appears to be yielding to the pressure of its contents. There is usually no evidence of new periosteal bone ; in fact, the thin bony wall may even appear to have been completely absorbed in one area. Spontaneous fracture through such a cyst is often the event which leads to radiography and to the discovery of the lesion.

OSTEOCLASTOMA

In the early stages of its development this tumour may present a radiographic appearance which rather resembles the chronic abscess. The discovery of such a tumour at this stage would be accidental, for the signs and symptoms are negligible, radiography of a bone following trauma being the usual means of recognition. The clinical history will therefore be a most essential factor in identification.

SARCOMA

There is a type of sarcoma which starts in the medulla by destroying adjacent bone and producing an abscess-like cavity that may or may not have reactive changes in the adjacent bony wall. Its boundaries are not clearly defined as in the case of the simple bone cyst. It may lead to spontaneous fracture, and subsequent radiographic appearances may give the suspicion of a sequestrum within the abscess-like cavity. The short history and the paucity of clinical signs and symptoms associated with the radiographic features should arouse suspicions of the gravity of the lesion: further radiographs after a week or so may reveal conclusive evidence of its nature. Often the bone in the region of the fracture will now show periosteal spicular formation.

ENDOTHELIAL MYELOMA

Endothelial myeloma of the bone occurs at about the same age periods as we find with chronic bone abscess. Like bone abscess it may be associated with lesions in other parts of the skeleton. It often shows intermittency of symptoms. The clinical features, however, do not reveal the chronicity of the bone abscess; the progress of the lesion is more rapid. The radiographic features, which bear some resemblance to those of chronic bone sepsis, I have dealt with elsewhere. Often a marked response to *x*-radiation therapy is seen in endothelioma, and this is of diagnostic significance. Serial radiographic study of the lesion will usually suffice for identification.

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PARASITIC FOETUS SUCCESSFULLY REMOVED BY OPERATION*

BY

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(WITH SPECIAL PLATE)

A male child born on April 6, 1937, was admitted to the Transvaal Memorial Hospital for Children under my care on April 26. He was born normally in a right occipito-anterior position, there being no difficulty with the labour in spite of the child being the mother's first. The period of gestation was normal.

On examination an incompletely symmetrical conjoined twin was found attached to the epigastric area of the host by a fleshy pedicle, and consisted of a right arm, an abdomen, lower limbs, penis, and scrotum. The lower limbs were kept in a frog position astride the abdomen of the host, the penis and scrotum being opposite the host's umbilicus (Figs. A and B). On palpation a bony pelvis and sacrum could be made out, but no vertebral column or ribs. A rounded firm mass could be felt in the abdomen of the parasite, and there was an imperforate anal dimple; a heart-beat could not be felt or heard, and no movements were observed, the parasite appearing devoid of sensation. Both the host and the parasite passed urine at different times. The host, except for the attachment of the parasite, was normal.

Barium was given to the child by mouth, and was observed under an *x*-ray screen. It was found to pass through the stomach and small and large bowels of the host, but not in the parasite, suggesting that even if there were bowel in the parasite there was no communication between the two.

Four cubic centimetres of uroselectan B were later injected into a vein and radiographs were taken at frequent intervals for an hour. The dye was easily visible in the parasite, revealing a normally functioning kidney, but it

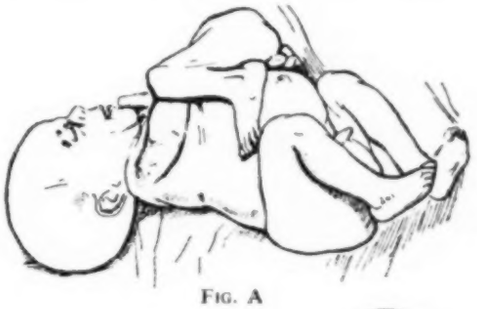


FIG. A

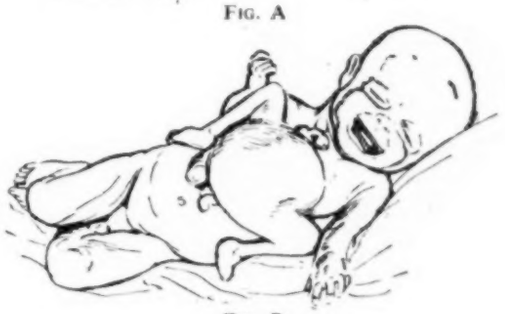


FIG. B

Illustrations showing the relative positions of host and parasite. (Redrawn, from photographs, by Audrey J. Arnott.)

was poorly shown in the host, owing to there being a large quantity of intestinal gas; but the secretory systems were present and the dye collected in the bladders of host and parasite.

The host during the following two months was growing normally, while the parasite remained stationary, the ratio of host to parasite having risen from approximately 2½ to 1 at birth to 4 to 1 on June 15. The child continued making this progress till August 23, when surgical removal of the parasite was decided upon.

The Operation

Under general anaesthesia an incision was made round the parasite through skin and subcutaneous tissue, and it was then noticed that the peritoneal cavities of the host and parasite were continuous. A loop of blind-ending bowel from the parasite lay free in the host's part of the peritoneal cavity, and a fibrous cord, apparently a urachus, joined both bladders. The host's abdominal cavity contained its normal viscera, but in the parasite's peritoneal cavity there was only a horse-shoe kidney with two ureters entering a bladder.

The peritoneum was cut close to the parasite, leaving enough for the host's abdominal cavity, the blind loop of bowel was returned to the parasite, and the fibrous cord joining the two bladders was ligatured and cut near to the host's bladder. The host's abdomen was then closed in layers. The wound healed by first intention, and the child was discharged from hospital on October 2, 1937. The parasite is shown in Fig. 1 of the Plate.

On February 2, 1938, the child was again seen, being then in perfect health. He had put on weight, and there was no sign of ventral hernia having developed at the site of operation (Plate, Fig. 2).

* Shown at the March meeting of the Southern Transvaal Branch of the Medical Association of South Africa (B.M.A.).

Clinical Memoranda

Recurrent Cerebral Thrombosis with Recovery

The case of cerebral thrombosis of which I give some details strikes me as being rather unusual, if only because the patient has made such a complete recovery after each attack, and this in spite of her age and the alarming character at the time of some of her symptoms.

CASE RECORD

A lady aged 69 became very depressed in February, 1936, and strange in her manner, following an accident to her daughter whereby the latter lost an eye. Her relatives stated that she had become very confused, and no longer took any interest in either her personal cleanliness or her clothes, whereas before she had always been most particular in this respect. At the same time her speech became indistinct, and there was considerable muscular weakness, so that she could hardly walk. Her pulse was slow (60) and soft, and her blood pressure 120/60. The heart sounds were muffled. The pupils were small and contracted, and barely reacted to light; the knee-jerks could not be elicited. There were no other physical signs, and the Wassermann reaction was negative. Complete recovery followed within a month.

After a period of perfect health a similar attack occurred in May of 1937, but was marked by periods of coma alternating with spells of motor activity, when the arms were slowly and mechanically raised and dropped, to give rise later to considerable general restlessness. Insomnia was a feature of this attack. Complete recovery followed within a month.

On December 23, 1937, she again became strange in her manner; her expression was vacant, and she had difficulty in recognizing those around her. By December 27 she had lapsed into a deep coma. A catheter specimen of urine showed albumin + and sugar *nil*. There was incontinence of urine and faeces. The arms were flaccid but not completely paralysed. By the evening of December 28, as her condition showed no improvement, I gave a hypodermic injection of digitaline grain 1/100 with strychnine grain 1/60; this was followed by a marked improvement within half an hour, so that she opened her eyes and responded to questions with a considerable degree of intelligence. These injections were continued thrice daily for the next two days, by the end of which time the patient was talking and answering questions almost normally.

Unfortunately a profuse and foul diarrhoea now set in, and rapidly dehydrated the patient; the eyes became sunken, the face thin, and, what was more alarming, she rapidly became stuporous and sank in a heap off her pillows, and presented all the signs of rapidly approaching death. Added to this, a gangrenous patch 2 in. long by 1" in. wide had developed at the upper end of the natal cleft. Kaylene in one-drachm doses in a little water or milk was tried and retained. This was increased to a dessertspoonful every three or four hours on the following day, and met with a quick response. The stools lost their frequency and their abnormal character, and the patient started to take her food once again and show every sign of a return to health.

The sloughing tissue on the buttock was irrigated with eusol three times daily and soon separated, leaving a deep but healthy-looking wound, which gradually but completely granulated up with the aid of lotio rubra.

The patient has now made a complete recovery.

SUMMARY

An elderly lady with a somewhat low blood pressure and slow pulse develops cerebral thrombosis as the result of severe mental trauma. Symptoms suggest a lesion of the frontal lobes in the first attack as evidenced by a change in character and behaviour. This postulates a thrombosis of the anterior cerebral artery. The second attack was marked mainly by motor activity: the up-and-down movements of the arms and the general restlessness suggest lesions at sites different from the first attack, and in the area supplied by the middle cerebral artery. The third attack, more serious than the first two, suggests a more complete thrombosis of the middle cerebral artery, as shown by the flaccidity of the arms and the loss of control of the sphincters.

The use of the old and well-tried drugs digitaline and strychnine, based on the pathology of the condition, was amply justified by the astonishing response. The value of kaylene in acute infective conditions of the bowel is also well worthy of mention.

G. LLEWELLYN DAVIES, M.R.C.S., L.R.C.P.

London, S.W.6.

Orthoptic Cure of an External Squint of 35 Degrees in a Woman of Thirty

I think that an account of the cure of this case should convince sceptics that there must be something in orthoptics, and perhaps also raise hope in the hearts of adult squinters, who would give much to have a pair of straight eyes, like the majority of their fellow beings.

This woman had had a bad squint in her left eye from early childhood, but there were points in her favour: (1) it was an external squint; (2) she was a woman, and had therefore a stronger desire to be cured than most men have—her mirror was her constant ally. The vision in the right eye, with

$$\frac{-0{\cdot}5}{-3{\cdot}0 \quad \text{ax. } 145}$$

correction, was 6/9, and in the left eye, with

$$\frac{-0{\cdot}5}{-2{\cdot}5 \quad \text{ax. } 30}$$

correction, was 6/6, but of course only the right eye was being used.

The angle of the squint was 35 degrees, and when using a separator, with a coin in front of the good eye, she could just see a bright light held in front of the other, but not a non-luminous object such as a piece of white paper—that is, vision was entirely uniocular.

She came to see me twice a week and practised at home about three-quarters of an hour daily with great regularity. Within ten weeks the eyes were straight, but "only while she remembered." In four months the acquirement of stereoscopic vision and the great increase in *brightness*, consequent on the use of both eyes, had made temporary relapses into uniocular vision so distasteful that no further exercises were needed to keep her eyes straight.

The stages of her training were as follows: (1) The acquirement of vision with both eyes simultaneously. This was done with Remy's separator and Cantonnet's mirror stereoscope.

(2) The transition from simultaneous vision to binocular vision—when for the first time in her life, while using *both* eyes, she saw an object in space as one. This was achieved by means of exercises with Cantonnet's stereoscope, the large diploscope, and the small diploscope, together with Javal's grid for reading.

(3) Lastly, stereoscopic vision had to be acquired. For this purpose she went through a course of Swan-Cole orthograms, using the ordinary Holmes stereoscope. The whole training was completed by a study of anaglyphs by Dr. Margaret Dobson.

The enormous superiority of this orthoptic cure over a surgical cure, if indeed such had been possible, is obvious when one remembers that a surgical cure would have been merely cosmetic. The originally deviated eye would have remained a non-seeing eye, and the great incentive to retaining a pair of straight eyes—namely, stereoscopic vision—would have been absent.

Tisbury, Wilts. W. H. DU PRÉ, M.B., B.S.Lond.

Reviews

DIETETIC MALNUTRITION IN THE TROPICS

Tropical Nutrition and Dietetics. By Lucius Nicholls, M.D. (Pp. 165; 49 tables, 2 plates. 7s. 6d. net.) London: Baillière, Tindall and Cox. 1938.

In his preface to *A Treatise of Foods*, published in 1704, Louis Lemert remarks that "Several Authors have treated of this Subject, but some of them have been so large and prolix, that there is no Reader, though never so much bent upon it, but must be dashed, in considering only the length of the Work; Others have handled it with so much barenness and brevity, that you can scarce meet with half the Things there, which ought to be in." The same might be said of a number of authors who have treated of this subject within recent years; but not of Dr. Lucius Nicholls, whose recently published book *Tropical Nutrition and Dietetics* gives a clear, concise, and practical account of the relation of foods to health and disease in the Tropics. It is meant primarily for medical practitioners who work among the masses in these regions; but those working elsewhere will find it worth their while to study it, for experience gained in the Tropics of disease due to dietary deficiencies provides much that is instructive for doctors elsewhere. Of the eleven chapters in the book six are devoted to an up-to-date account of the essential constituents of food—carbohydrates, fats, proteins, minerals, vitamins, "roughage"—and the energy value of foods. In regard to protein requirements it is pointed out that while "there is a general acceptance among the nutritionists of Europe and America that the daily protein allowance should be 100 grammes, this allowance is too high for tropical conditions." The author is in agreement with Aykroyd that 65 grammes is sufficient for men and 55 for women, additional allowances being made for growing children and lactating women. The weight of fat in the diet should be about the same as the weight of proteins. Three chapters on dietary surveys, analyses of foodstuffs, and the prescribing of diets will be found most useful.

The chief interest of the book lies in the account it gives of the symptoms and signs of dietary deficiencies. In addition to the extreme conditions such as beriberi, scurvy, pellagra, and keratomalacia, which arise from various food deficiencies, "the study of the less cogent results of dietary deficiencies has brought to light the prevalence of many signs, symptoms, stunted growth, and other effects." These are: dry and staring hair, phrynoderma, pellagra-like eruptions, scrotal dermatitis, petechial haemorrhages, oedema, stomatitis, sore tongue, marginal stomatitis, oesophagitis, spongy gums, Bitot's spots, night-blindness, xerophthalmia, dental decay, malocclusion and irregularities of the teeth, signs of rickets, neuritis, pareses, anaemias, lowered resistance to infection, particularly of the lungs and intestines, and poor growth and condition of the body. No doubt future study will reveal others. For "if Foods contribute so necessarily to the preservation of Life and Health; they also produce the greatest part of the Distempers, to which we are subject . . . and so the knowledge we ought to be most desirous of, should be that of Foods" (Lemert, 1704). Dr. Nicholls's book provides this knowledge, showing why it is that foods contribute so necessarily to health and how it is that improperly constituted food produces many distempers. His object—"to give, as shortly as possible, the general principles of nutrition and dietetics and to collect under one cover the salient points of this information"—has been well achieved. If there be a fault to find in the book it is in its title, "Tropical Nutrition." Can nutrition, a function of the body, be spoken of as "tropical": pertaining to, characteristic of, or peculiar to the Tropics?

TUMOURS IN THE NECK

Surgical Pathology of the Diseases of the Neck. By Arthur E. Hertzler, M.D. (Pp. 237; 206 figures. 21s. net.) Philadelphia, London, New York, Montreal: J. B. Lippincott Company. 1938.

The tumours which appear in the neck form a group of considerable surgical interest covering a very wide range of pathology. There is, indeed, no region in which the appearance of a tumour is more common or in which its diagnosis may be more difficult. The present volume, dealing as it does with both the surgical and pathological characters of this group of tumours, will be of interest to medical practitioners in many fields.

The first chapters are devoted to Hodgkin's disease and the lymphosarcomas, and an account is given from the surgical standpoint of the various views which pathologists have taken of these conditions. This is followed by a discussion on the rare primary tumours of the neck and of thyroglossal and branchiogenetic cysts. A description of the benign tumours of the neck follows. Diseases of the salivary glands are treated in some detail, and the volume concludes with a description of the secondary tumours and infectious conditions arising in the neck.

The whole volume is beautifully illustrated both by photographs of typical cases and by microscopical sections. The descriptions given are brief and to the point, and while no attempt is made to go into elaborate pathological details, the accounts given are sufficient for practical purposes. The volume is indeed essentially practical, and will well repay the study both of the student and of the surgeon who has to deal with these conditions.

NUTRITION AND DIETETICS IN BRIEF

Food and Physical Fitness. By Professor E. W. H. Cruickshank, M.D., D.Sc., M.R.C.P. (Pp. 148; 15 tables; 2 figures. 5s. net, postage 5d.) Edinburgh: E. and S. Livingstone. 1938.

Under the title of *Food and Physical Fitness* the Regius Professor of Physiology at Aberdeen has made available in the form of a short monograph a series of public lectures which he had delivered under the John Farquhar Thomson Bequest. The book is a very good attempt to make available to the general public the results of research in nutrition, and the elements of sane dietetics. In his introduction Sir John Orr says that information of practical importance has been collected and presented in lucid and interesting language which can be understood by the general public, and this is a very fair commentary. The interest of the public is growing steadily in the subject of nutrition in relation to health and disease and to economic policy. This book will be of great service to those engaged in social services, and to householders who wish to make the best outlay of their budget on diet. The general principles of the energy needs of the body and the value of the different foodstuffs for energy production and the sources of minerals and vitamins are very carefully dealt with.

In the last few chapters Professor Cruickshank deals with subjects which are a good deal in the public eye at present—namely, the relation of dental caries to defective diet, and the effect of adequate nutrition on physique and muscular development. In a somewhat trenchant chapter on vegetarianism he exposes the fallacies

of various modern diet fads. These distortions of truth have undoubtedly arisen to fill the vacuum created by the fact that the public are increasingly aware of the importance of diet in relation to health, and yet the average doctor is either unable or unwilling to translate physiological principles into simple language which the lay public can understand. Professor Cruickshank's book will go a long way to filling this vacuum by reasoned facts, and it would be a great advantage if the book were read not only by the lay public but also by the medical profession.

THERAPEUTICS OF ANTIMONY

Advances in the Therapeutics of Antimony. By Professor Dr. Phil. Nat. Hans Schmidt and Dr. Med. F. M. Peter. With a preface by Philip Manson-Bahr, C.M.G., D.S.O., M.D., F.R.C.P. (Pp. 257; 10 diagrams. RM. 18; bound, M. 19.50.) Leipzig: Georg Thieme. 1938.

This is an English version of *Ergebnisse und Fortschritte der Antimontherapie*, by Professor Hans Schmidt and Dr. F. M. Peter, which was published early last year. In our review of the German volume (*British Medical Journal*, 1937, **2**, 66) we mentioned the remarkable rapidity of the advance in the importance of the antimony compounds in the treatment of tropical diseases. An English edition is therefore very welcome; moreover, the authors have revised and expanded the original material, and have incorporated the literature up to the end of 1937. They have also added an author index, which is a very valuable addition. Dr. Philip Manson-Bahr has contributed a preface, in which he reviews the extraordinary career of antimony as a therapeutic agent. Jezebel used it to darken her eyebrows, Paracelsus boomed it as a panacea, and the University of Paris solemnly banned it and all its users. In the first half of the nineteenth century it was the chief basis of the orthodox method of "heroic" treatment, while by the end of the nineteenth century it had almost ceased to be used. Finally, in the twentieth century it has made a sensational come-back, and organic antimonials are steadily increasing in importance in chemotherapy.

GRINKER'S NEUROLOGY

Neurology. By Roy R. Grinker, M.D. Second edition. (Pp. 999; 406 figures. 38s.) London: Baillière, Tindall and Cox. 1937.

The second edition of this work appears within four years and without any outstanding change in its scope, except that the descriptions of new developments, such as the increased knowledge of the physiology and pharmacology of the autonomic nervous system and advances in diagnostic methods such as the electro-encephalogram and improved encephalography, have necessitated the shortening or omission of certain sections in the first edition if the aim of the author to keep the work within the covers of one volume was to be maintained. In spite of this laudable aim the work is large and heavy, extending to nearly 1,000 pages, which only goes to show what a complicated subject neurology has become.

The scope of the book is along the lines of the modern systematic textbook, the arrangement being largely on pathological lines and covering the field of organic neurology reasonably completely. It is well illustrated, with a useful bibliography at the end of each section. A good many textbooks of this kind are being published nowadays which cover much the same ground in much the same way, and it is a little doubtful how far their multiplication is worth while. Probably each is patronized less on its individual merits than on the extent to which the author is known personally or by repute to those who happen to want a comprehensive manual of neurology at the moment. The present volume will therefore appeal to the Chicago medical schools and those other schools which are under the influence of that important centre of learning; but we see no particular reason to commend it to British readers to any greater extent than several other works of a similar nature.

PRACTICAL ANATOMY

Manual of Practical Anatomy. Volume I. Upper Limb, Lower Limb and Abdomen. Volume II. Thorax, Head and Neck, Central Nervous System, Eye and Ear. By J. Ernest Frazer, D.Sc., F.R.C.S., and Reginald H. Robbins, M.A., M.D. (Pp. 536 and pp. 456; 281 figures and 290 figures. 10s. 6d. each volume.) London: Baillière, Tindall and Cox. 1937.

The *Manual of Practical Anatomy*, by Frazer and Robbins of St. Mary's Hospital, London, is something more than a guide to dissection and regional anatomy, since the detailed description of the structure of the adult subject is explained and supplemented by references to developmental anatomy. These not only add interest to the anatomical facts but throw a clear light on many details of anatomy which would otherwise be obscure. Due attention has also been paid to the medical and surgical aspects of anatomy, and we may specially mention in this respect the descriptions of the thoracic and abdominal regions.

The book is in two volumes, but it is not burdened with too much detail, the full description of special structures such as the eye or ear being left for study in the larger systematic treatises on anatomy. The nomenclature employed is the "Birmingham Revision," and each volume has a separate index and glossary. The manual is on the whole well illustrated, many of the figures having been reproduced from standard works such as Hirschfield and Leveillé; others are new or have already appeared in Frazer's *Manual of Embryology* or in Buchanan's *Anatomy*; all of these have the unmistakable stamp of originality, and though some are schematic others are drawn from actual specimens and serve to illustrate particular points, such as the relation of articular cartilages, pads of fat, or synovial pouches to the ligaments of a joint. The book, which is the work of two experienced anatomists, is admirably adapted to meet the requirement of both junior and advanced medical students, not only with regard to the anatomical information which it contains but also as a training of the faculties of observation and dissection and as an aid to the passing of examinations.

Notes on Books

The first group of articles on the Management of Some Major Medical Disorders contributed to these columns were republished in March, 1936, as Volume I of *Treatment in General Practice*. This collection dealt with diseases of the respiratory system, acute specific fevers, and cardiovascular diseases. In reviewing it Dr. Robert Hutchison said that "the articles are so uniform in their mode of presentment that they might all have been the work of one author, whilst the therapeutic instructions given in them are clear and definite, and the reader is not confused, as he so often is in books on treatment, by the mention of lists of remedies which are 'sometimes successful.'" The book was reprinted in March, 1937, and now a second edition, revised by the several authors, is published by Messrs. H. K. Lewis and Co. at 8s. 6d.

For a generation and more Hawk's *Practical Physiological Chemistry* has been an outstanding work, and successive editions, reaching now to the eleventh (J. and A. Churchill, 35s.), have kept well abreast of the very rapid developments of the subject. In his great undertaking Professor PHILIP HAWK has, of recent years, enlisted the help of more collaborators, and three other well-known names now appear on the title-page, and various contributors have lent their expert knowledge and advice in different parts. The book is, and always has been, the complete laboratory guide, stocked with methods so carefully selected that they may be relied upon with absolute confidence. In places a point of detail may be lacking, but only where the original literature is quoted for fuller reference.

The monograph by Dr. ERICH A. HEIDE on *Die Bornholmer Krankheit* (Berlin: R. Schoetz, RM. 3), otherwise known as myalgia acute epidemica of Sylvest, consists of a critical review of the literature, including the articles which have appeared in the *British Medical Journal* by Pickles (1933, **2**, 817), Carter (1933, **2**, 86), Jay (1934, **1**, 79), Buchanan (1934, **1**, 120), and Scott (1936, **2**, 698). The clinical aspects, aetiology, epidemiology, and distribution of the Bornholm disease in Germany and other countries are discussed at length and the author comes to the following conclusions. This disease represents one of the mysterious short-lived febrile maladies of temperate zones on which new light may be shed by further epidemiological and parasitological investigations, as has recently been exemplified by tularaemia, Japanese river fever, Weil's disease, and tropical and subtropical typhus. It is probable that the Bornholm disease is caused by some kind of living virus which is kept in an animal reservoir and transmitted by blood-sucking insects at definite seasons of the year. The question further arises as to the existence of endemic, epidemic, or pandemic diseases which are transmitted not by a specific agent but by telluric and cosmic influences which so affect man, animals, or plants that they develop a disease just as if they had been attacked by a living virus. The author suggests that the Bornholm disease may be an example of this kind.

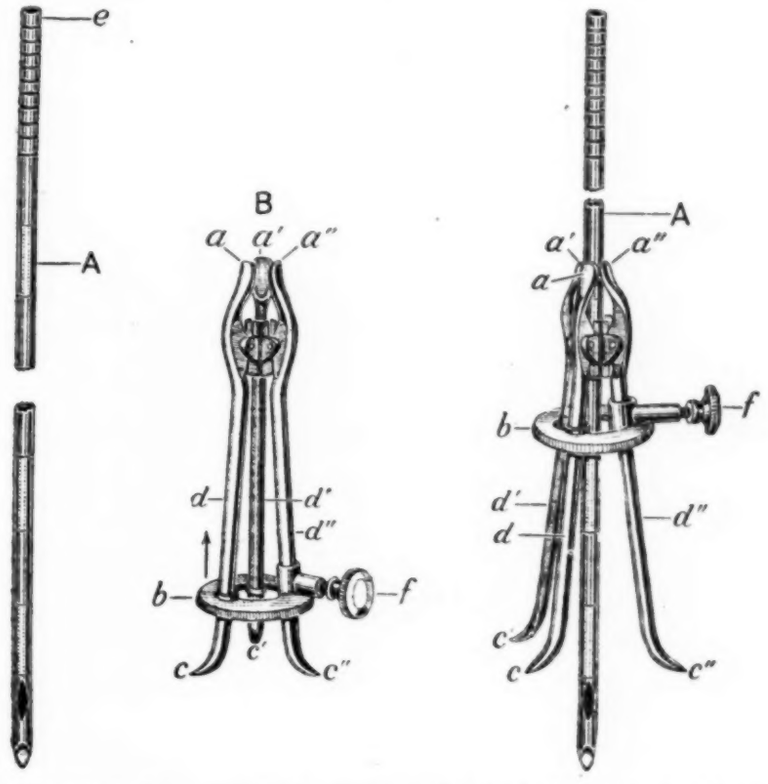
The *Internationale Zeitschrift für Psychoanalyse* and the journal *Imago*, the official organ of the International Psychoanalytic Society, both edited by Professor Freud, have ceased publication. The *International Journal of Individual Psychology* will also cease publication.

Preparations and Appliances

TRIPOD FOR VENTRICULOGRAPHIC NEEDLES

Dr. A. ORLEY (London, W.1) writes:

It is often difficult to keep steady the ventriculographic needle during the repeated aspirations of cerebrospinal fluid and injections of air in ventriculography. Even a slight shifting of the point of the needle may stop the flow of the fluid. The device depicted above helps to steady the needle and to keep it in the correct position after it has penetrated into the ventricular cavity. It consists of a tripod, which is slipped over the needle as soon as the cerebrospinal fluid begins to flow. The pointed ends of the slightly curved legs of the tripod bury themselves in the diploë of the trephine opening, while the blades at the opposite end of the legs grip the needle firmly, and thus prevent it from being pushed in or out during the subsequent manipulation. The tripod is manufactured by Messrs. Lewis Bros., 68, High Street, Marylebone, W.1.



A, Ventriculographic needle, 17 cm. long; once in the correct position in the brain it is fixed by means of the tripod (B), which is made to slip over the needle, *a*, *a'*, *a''*, Short blades for gripping the needle. *b*, Movable ring. When it moves upwards in the direction of the arrow, the legs (*d*, *d'*, *d''*) of the tripod spread out, and the points (*c*, *c'*, *c''*) bury themselves in the diploë of the trephine opening. Simultaneously the blades (*a*, *a'*, *a''*) are brought closer together and grip the needle, which is thus immobilized. The set screw (*f*) prevents the ring from sliding after it has been brought into the correct position. The needle (A) is then connected to a syringe by means of a short rubber tube, which is slipped over the free end of the needle. (Actual size.)

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CLINICAL SCIENCE

To all who were privileged to enjoy Victor Horsley's friendship, and especially those who were so fortunate as to work with him as collaborators or disciples and were thus able to savour the scientific genius as well as the courageous and lovable personality of this great Englishman, the very title " Victor Horsley Memorial Lecture " will bring a flood of happy recollections—perhaps most of all to those who were with him in that last and noblest chapter of his life, written in Egypt and Mesopotamia and concerned with greater things than science. We do well to commemorate such men, primarily that we may not cease to learn from them those lessons of moral courage, intellectual integrity, and scientific imagination that their lives show forth, but also, and particularly in this instance and at this time, because Horsley exemplified that successful combination of clinician and scientific investigator the very possibility of which has recently been challenged by a distinguished laboratory scientist. So wide was the range of Horsley's scientific interests that in a single lecture but one aspect of it can be adequately considered, and Dr. Gordon Holmes has chosen his contributions to the physiology of ocular movements as the theme of the present lecture. He has developed this in a manner reminiscent of Horsley's own method, for he has presented a body of precise observations and has proceeded to provide an analysis of them on physiological principles.

The cerebral integration of the ocular movements is a peculiarly complex problem in the physiology of movement, and this perhaps because of the abundance of facts of observation rather than from any lack of them. In some ways it may at first sight seem that these movements are a law unto themselves. Their cortical representation in the frontal lobe is anatomically separated from that of other movements, and the ocular responses to electrical stimulation of this representation differ qualitatively in some respects from the more familiar motor responses to stimulation of the so-called " excitable motor cortex." Again, in many widespread disorders of movement and of posture from brain lesions eye movements alone escape disturbance, as, for example, in chorea, double athetosis, and paralysis agitans, to cite but the most familiar. To Hughlings Jackson we owe certain illuminating generalizations as to the modes of dissolution of function in disease of the central nervous system, and in the light of his conception of loss and release of function the phenomena of cerebral paralysis have been analysed on lines that are familiar to students of neurology.

Jackson himself made many studies of disorders of ocular movement, but these disorders have never been brought fully within the scope of the principles which he showed to govern the evolution and form of disorders of movements other than those of the eyes. It is the merit of Dr. Gordon Holmes's lecture that he has so brought them, and has demonstrated that a careful study of disorders of ocular movements from cerebral lesions reveals those same phenomena of loss and of release of function with which we are familiar in respect of other movements. Thus the exaggeration of the fixation reflex which may be found in association with certain forms of loss of voluntary deviation of the eyes is seen to be a release phenomenon comparable with the hypertonus and other increased postural reflex reactions that are so prominent a feature of what we call spastic paralysis. Conversely, there are described the disorders of voluntary movement and posture of the eyes that result from a defect of the fixation reflex, and this reflex itself is also subjected to close physiological analysis. In a word, Dr. Holmes's studies have brought one more group of clinically observed disorders of function within the scope of those generalizations that have already proved so fruitful in neurology, and, while thus making these additions to our knowledge, he has also integrated them with the general body of neurological theory. This is the true scientific method, and that it can still be pursued by simple clinical observation must be a cheering sign to those who believe that this method has yet a rich harvest to give to medical science and that it has not yet yielded pride of place to the experimental method. These studies also teach us that, whatever help we may receive in the advancement of medical science from the labours of the experimental physiologist, it must always be the clinician who places the coping-stones upon these labours, by determining their application, as only he can, to the human subject.

The English school of neurology has a great tradition, and we may learn from the studies which form the subject of this lecture that this tradition is still alive and honoured.

A PIONEER HOSPITALS CENTRE

At page 138 we publish an account of the Birmingham Hospitals Centre and the Medical School Buildings of the University of Birmingham opened on Thursday by the Duke of Gloucester, acting in place of the King, who was prevented by indisposition from fulfilling the engagement. This ceremony is an outstanding event not only in the annals of a city famous for its progressive spirit and local pride, but also in the history of voluntary hospital planning in this country. The Hospitals Centre —which means a hospital or group of hospitals linked structurally and in a working arrangement with the Medical Faculty of the University—is well understood in the United States, but the Birmingham achievement is a pioneer one in Great Britain. The new buildings are a first instalment providing some 500 beds; the completed hospital is planned to accommodate 740. It embodies the latest ideas and experience in design, planning, and administration. The beds are to be organized in units of sixty, each unit being complete in itself. The first instalment of patients is deferred until the autumn. To provide a complete organization working at full capacity will take some time, especially in a hospital of modern design, including all the many departments supplying the needs of a medical school.

Fully to understand the idea behind the scheme for the Hospitals Centre it is necessary to go back a little. Soon after the war it became apparent that there was an increasing deficiency of hospital beds in Birmingham, having in view its growing population and perhaps its increasing "hospital-consciousness." The two large general voluntary hospitals—the General, founded in 1766, and Queen's, in 1840, both of them teaching hospitals—began to consider the question of extension on their existing in-town sites. The General, with its Jaffay branch, has 536 beds, and Queen's 324. The Hospitals Centre scheme was made possible by the amalgamation of these two hospitals for working purposes, under the name of the Birmingham United Hospital, of which Lord Austin is chairman. A joint committee was formed, including representatives of both institutions, and the ambitious plan of a Hospitals Centre right outside the city was determined. As soon as the full complement of the 740-bed hospital is complete, Queen's will close down. Another ruling consideration which has led to the establishment of the Hospitals Centre is the need for closer co-ordination with the Medical Faculty of the University. Hitherto the Medical Faculty (with those of Arts and Law) has been housed in the buildings of Mason's College in the centre of the city. It has been unable to follow the other faculties out to Edgbaston so long as the two teaching hospitals remained on their present sites. As the Prince of Wales said when he laid the foundation stone of the hospital and cut the first sod of the medical school buildings in 1934: "A working partnership between the hospital and the Medical Faculty of the University is now universally recognized as the most effective service that can be rendered to those in need of care and treatment."

The most urgent need was for general medical and surgical beds, but it is expected that in due course the various special hospitals—of which there are nine in Birmingham—now located in the centre of the city will migrate to the new site. This must be in each case a rather complicated business in view of the disposal of properties, but the special hospitals are already associated with the scheme and they will have the opportunity of working out with the Executive Board plans for their own development on the site while still preserving their identity. In years to come there may be in the city only casualty clearing stations, and with an adequate ambulance service all in-patient and out-patient provision will be concentrated at Edgbaston. The site, which the Birmingham Hospitals Centre owes to the munificence of the Cadburys, is of 150 acres, of which 100 acres are scheduled for hospital purposes and 50 for open space. This is considered adequate for all hospital developments for at least half a century to come.

PLANS FOR PLYMOUTH

Publication of this number of the *British Medical Journal* coincides with the opening of the business and political part of the 106th Annual Meeting of the British Medical Association, and in our next *Supplement* we expect to give a full report of the first two days' proceedings in the Representative Body. The Association has met only once before at Plymouth, sixty-seven years ago. The meeting of 1871 in the "Three Towns" (Devonport, Stonehouse, Plymouth) was regarded as one of the most enjoyable ever held, and if the elaborate plans sketched in last week's *Supplement* are carried through in the traditional Plymouth way the same will be said of the meeting of 1938. No member of the British Medical Association has to be reminded that at Plymouth he treads historic soil. It is, moreover, a locality which combines the charm of seascape and landscape with the varied animation of a great port and arsenal. Indeed, the programme of entertainments and relaxations in a beautiful setting is so full that there may be risk of pleasure standing in the way of duty.

The seventeen Scientific Sections have arranged a good and many-sided programme for Wednesday, Thursday, and Friday. Three combined sessions will be held: one to discuss sciatica, another the prevention of puerperal sepsis, and another rheumatoid arthritis. The main subjects taken by the Section of Medicine are toxic infective jaundice, anxiety states, and organotherapy; and by Surgery, the treatment of acute appendicitis, cancer of the breast, and the septic hand. The Section of Obstetrics, when meeting alone, will discuss occipito-posterior positions and their complications; Orthopaedics, fractures involving the knee-joint; Neurology and Psychological Medicine, vertigo, and the differentiation of states of depression. Ophthalmology has what may be called a joint topic—co-operation between ophthalmologist and physician in cases of visual loss; and Medical Sociology, not to be outdone, makes co-operation in public health administration its chief item. The Section of Public Health will discuss the future development of the hospital system; Physical Medicine (meeting at Torquay on Friday), the basis of national fitness; and the Services Section, the evacuation and treatment of gas casualties; while Physiology stoops to conquer the practising doctor with a session devoted to light in relation to climate and health. Pharmacology will debate the dosage of anaesthetics, the teaching of anaesthesia, and ovarian therapy. Pathology has chosen the aetiology of rheumatism and rheumatoid arthritis for discussion; Tuberculosis, the prevention of the disease with which it is concerned, and skiagraphy of the chest; Radiology, *x* rays in the elucidation of haemoptysis, and the treatment of uterine haemorrhage—two matters of interest to other specialties. The programme for Diseases of Children includes a debate on the modern failure of breast feeding, and another on empyema in early childhood; and on its second day a lecture in memory of the late Editor of this *Journal*, on Some Nutritional Problems of Childhood, will be given before that Section by Professor L. G. Parsons, to whom the Dawson Williams Prize has lately been awarded. Beyond these larger items in the Sectional plans for next week there are many independent papers covering a wide field of practice and research, all of them listed in the programme published on July 9. It is to be hoped that the audiences in the Sections will be worthy of the fare provided.

In 1871 it was held to be a matter for serious consideration by members "whether it will not be desirable to subdue the otherwise naturally growing tendency to allow the holiday-making to override the scientific and working objects of these annual meetings." Never before, so the argument ran, had the British Medical Association covered so large a ground of public usefulness or influenced so strongly public opinion. "The annual meetings offer the finest professional platform which exists for the propagation of opinions in the profession, the publication of researches, and the enunciation of facts. . . . The natural course of events would be, therefore, that these meetings should continue to attract papers of more and more value; and it was the operation of this opinion, and the great increase in the scientific prestige of the Association, which necessitated recently the formation of a multiplicity of Sections. The reaction from the years of sectional activity to those of continuous pleasure-making requires to be checked." The visitors to Plymouth in 1871 had earned these prim words of rebuke by their neglect of work for play. Some such warning may be needed even in 1938.

THE STREPTOCOCCUS CARRIER PROBLEM

The new chemotherapy has so changed the outlook in the problem of puerperal sepsis that its other aspects are apt to be forgotten. It is indeed interesting to speculate on the direction which prophylactic efforts might have taken during the past three years had so strikingly successful a treatment not monopolized attention. The chief advance preceding this had been to identify the source of puerperal infection as usually the nose or throat of a contact with the case, and measures for detecting such carriers were coming to be regarded as an obligation on those responsible for the conduct of midwifery, at least in institutions. Where do we stand now in this matter? It has been emphasized repeatedly that the possession of a powerful therapeutic weapon in sulphanilamide is no excuse for relaxing precautions or for neglecting other forms of treatment. It must nevertheless influence a decision when the proper course of action is really in doubt, or when extreme measures in detecting and excluding carriers are impracticable. Strictly speaking, the whole personnel of a midwifery unit should be swabbed on entry and at intervals thereafter, and carriers of haemolytic streptococci proved to be of Group A should be excluded until free. The rigid application of this rule would overwhelm existing bacteriological laboratories with an exceedingly tedious type of work and probably demand the establishment of others, and at the same time it would sometimes disorganize clinical work by requiring the banishment of essential personnel. Nor will these extreme measures necessarily succeed, for a member of the staff may acquire a streptococcal infection at any time, and an active tonsillitis or sinusitis is a far greater danger than the quiescent carrier. Any efficient precautionary system will include prompt attention to any acute catarrh of the upper air passages, whether by way of removal from duty or of bacteriological investigation; the question is whether this form of precaution, which should also involve the clinical recognition of any chronic infection of the upper air passages and its consequent

investigation, is not preferable to a system of universal swabbing. This attitude was supported in our correspondence columns some time ago, and it is favoured by Lucy M. Bryce and Phyllis Tewsley,[1] who report in detail an extensive study of the carrier condition in connexion with a small outbreak of puerperal sepsis in Australia. This investigation was somewhat hampered by the lack of facilities for the serological typing of streptococci, and an attempt to classify them by determining their susceptibility to different strains of bacteriophage did not provide a satisfactory substitute for this method. Nevertheless the results indicate clearly that, whereas in the presence of spreading streptococcal infection persons with a normal upper respiratory tract may become carriers for a short period, only those with clinically detectable abnormalities in this region tend to remain carriers irrespective of their environment. The conclusion drawn is that a clinical examination of the nose and throat should precede the study of midwifery ; this is a common-sense attitude which has much to commend it.

THE PECKHAM HEALTH EXPERIMENT

An interesting meeting was held at Clothworkers' Hall in the City of London on July 6 for the purpose of discussing the recently issued interim report of the work of the Peckham Health Centre. This report, entitled *Biologists in Search of Material*, was reviewed in these pages on June 18 (p. 1312). Sir Wyndham Deedes, who opened the discussion, said that five or six years ago the starting of such an enterprise as the Peckham Health Centre might well have been thought impossible, but despite difficulties and prejudices, Alpine if not Himalayan, Dr. Scott Williamson and Dr. Innes Pearse, the "seeking biologists," had surmounted them all. Too many experiments were undertaken by people who had a perfectly clear idea of what they wanted but did not allow the data—the material—to have enough to say in the matter. On the other hand, the Peckham experimenters had no preconceived ideas ; they were content to await whatever results the interaction of the material and the environment was capable of bringing about. The policy of "wait and see" in this connexion at least was not without its advantages. A great deal of money was sometimes spent in social work, but the people for whom the social services were designed were forgotten, or at least not studied. Great changes in social environment had taken place within the experience of the present generation. Man had been taken largely from the village or small town into a vast society in which the individual was lost, and few people had given scientific consideration to the sociological consequences of such change. One sentence in the interim report had struck him : "People tell us that there is no real neighbourliness. . . . We have discovered that the conditions suitable for neighbourliness are not there." The suitability or otherwise of the environment of the people made all the difference between happy and frustrated lives. Dr. Scott Williamson said that the whole significance of the interim report lay in the word "biological." Sir Wyndham Deedes had extolled the courage of the experimenters, but courage and faith and biology all went together. The most appalling fact to be deduced from the report was what could only be described as the devitalization of the people. The Centre was dealing with a representative cross-section of the community, not poverty-stricken, relatively well housed, many of the people in safe employment ; and yet in spite of the fact that various diagnosable maladies had been dealt with and maladjustments corrected, there had been no great rebound to health. The devitalization was present in various degrees ; many of the people enjoyed a sense of well-being (what our reviewer called "well-seeming"), but the population was rather a surviving than a living one. This was due to the heritage of environmental conditions in the lives of the young people. Later work at the Centre, subsequent to the period covered by the report, had brought out the helpful fact that, notwithstanding a people relatively devitalized, the children by the application of appropriate scientific measures could attain normal physiological standards. This was a great encouragement to go further and discover a scientific approach to the various problems by watching how men and women, under conditions of relative freedom, behaved and reacted to the facts presented to them in the simplest possible way. The experiment therefore had much further ground to cover. One lesson for our profession was well put by Dr. Scott Williamson. Medical practice of the future, he said, will have to take into account the fact that patients are not only sick persons but units in some form of social machinery, and the approach to the people is not best made through the contacts rendered necessary by sickness but through community centres or some such form of organization. In reply to a question he promised to offer some guidance to social workers and local authorities on the method of organizing in their respective localities such centres, free from officialdom, as Peckham.

TAR-VIRUS CANCER

Reference has been made several times recently in this *Journal* to the hypothesis that all malignant tumours are initiated and maintained in activity by a living virus. In order to explain the undoubted carcinogenic action of many chemical "irritants" in accordance with this hypothesis it is necessary to suppose that chemical action of this kind only serves to render cells susceptible to the virus. One of the leading advocates of this view, Peyton Rous, briefly announced two years ago the startling results of an experiment which at first sight appear strongly to support it. The Shope papilloma is an innocent tumour, infectious and unquestionably due to a virus, which occurs naturally in the skin of wild rabbits in some parts of America. It is transmissible to domestic rabbits, and in them sometimes undergoes malignant change, especially in response to trauma ; the virus, however, becomes irrecoverable after malignancy is established. Rous injected a suspension of this papilloma virus intravenously in rabbits whose ears had been tarred. The tar used very rarely caused malignant change, even after prolonged application, the only result being the formation of indolent papillomas.

[1] *Med. J. Austral.*, 1938, **25**, i, 639.

On the other hand, about three weeks after the intravenous injection of papilloma virus the tarred ears suddenly assumed great proliferative activity, and multiple cancers appeared on them and grew rapidly. Apparently two stimuli, each incapable in itself of causing malignant change, had co-operated to achieve this result with astonishing rapidity. Peyton Rous and J. G. Kidd[1] have now at long last published a full description of this phenomenon. Although this does not detract from its significance, it is now made clear that the effect is by no means a constant one: an exceptionally active virus suspension, preferably obtained from a natural growth in a wild rabbit, appears to be necessary to secure it. This paper also records in minute detail the effects of varying the technique in a number of ways, and in so far as these other results can be interpreted they point to the conclusion that malignant change occurs only when active virus injected intravenously becomes "localized" in a previously tarred area. C. H. Andrewes and his colleagues[2] have to some extent confirmed Rous's observation, using not papilloma virus but that of the Shope fibroma, a similar but different innocent tumour of rabbits. It will be interesting to see where this method of experiment ultimately leads. It should not be difficult so to adapt it as possibly to gain evidence of the presence of a virus in purely malignant mammalian tumours. Any such results would be of enormously greater significance than those hitherto obtained.

SYMPTOMS OF CARDIAC STANDSTILL

Some patients with heart-block have spectacular attacks in which there is loss of consciousness and convulsions, associated with extreme bradycardia or cessation of the heart beat. This syndrome, the Stokes-Adams attack, is also associated, though more rarely, with other disturbances of the cardiac mechanism that slow the circulation almost to a standstill. In the attack as usually described convulsions and apnoea take place while the heart beat is very slow or arrested, but P. Formijne[3] describes five patients with apnoea or convulsions which occurred after more or less normal cardiac activity had been resumed. Three had heart-block, one a syncopal attack of emotional origin, and one attacks of ventricular fibrillation or flutter. In two of these cases graphic records of the heart beat and of respiration during the attacks show that apnoea began at an interval of a few seconds after the return of the heart beat; convulsions or localized clonic movements were observed after about the same interval in three of the patients. Cerebral anoxaemia, which is held responsible for the convulsions and apnoea accompanying cardiac standstill, will not account for these events as observed by Formijne, and he suggests that they are due to the action on the brain of hyperventilated blood; the latter contains a high concentration of oxygen and a low concentration of carbon dioxide, and results from the continuation of respiration while the circulation is arrested. In experiments on narcotized dogs it was also demonstrated that apnoea and clonic contractions followed asystole when this was of 15 to 35 seconds' duration; analysis of blood taken from the carotid artery immediately after the return of the heart beat showed a reduced CO_2 content, and the blood was redder than normal arterial blood. The apnoea could be prevented by the inhalation of 5 per cent. CO_2 in oxygen during the period of asystole. The respiratory effects are believed to be due largely to chemical action on the respiratory centre, but some of the results indicated that the carotid sinus may also play a part. Immediate treatment is rarely possible for a patient in a Stokes-Adams attack, but in the light of Formijne's work oxygen and CO_2 might be given with a view to preventing convulsions.

[1] *J. exp. Med.*, 1938, **67**, 399.
[2] *Lancet*, 1937, **2**, 893.
[3] *Amer. Heart J.*, 1938, **15**, 129.

MEASURING EMOTION

In this country and in the U.S.A. a wide interest is taken in the measurement of mental attitudes and emotional traits, not only on account of the importance of these assessments in social, educational, and medical questions, but also on account of their uses in industry. In spite of this there has existed hitherto no collected account of the literature on this wide subject. To help to fill this gap Dr. P. E. Vernon has undertaken a descriptive survey of experimental work which has been carried out on the measurement of emotional characteristics. His survey, which has been issued by the Industrial Health Research Board of the Medical Research Council,[1] is restricted to an account of types of verbal behaviour which are susceptible to quantitative treatment. The techniques which have been invented for collecting groups of opinions are fully described and adroitly criticized by Dr. Vernon. In discussing the procedure of rating, he points out that in relation to the marking of examination questions both the average mark and the dispersion of marks given by each examiner are liable to scandalous variations which could be and should be adjusted. When due care is exercised in technique of experiments striking results are sometimes obtained. It is possible to measure the relative effects of various types of propaganda by examining people before and after they have been subjected to the influence of a cinematograph film. Of the specific tests quoted, one of the most ingenious is Watson's test of fair-mindedness. The person under examination is presented with a statement, such as "all, most, many, few, no Roman Catholics are superstitious." The subject who encircles either "all" or "no" is deemed to show prejudice in his response. There are also ways of detecting prejudice in the examiner. If, for instance, a rater regards a subject as highly artistic he will tend to attribute all the other traits commonly associated with the artistic temperament to this subject: if the rater thinks the subject melancholy he will fail to notice such of his characteristics as do not fit in with the preconceived

[1] *The Assessment of Psychological Qualities by Verbal Methods.* By P. E. Vernon, Ph.D. Med. Res. Counc. Industr. Hlth. Res. Bd. Rep. No. 83. London, H.M. Stationery Office. 1938.

over-simplified notion. This phenomenon, known as the "halo effect," usually due to the rater's general liking or disliking for the subject, is almost unavoidable. It gives rise to suspiciously high correlations between pairs of traits in the estimation of character. Following the lines originally laid down by Spearman in the analysis of special mental abilities, many investigators have attempted to analyse the results of questionaries, self-ratings, and vocational tests in terms of specific factors. For example, the degree of extroversion and introversion in a given subject has been thought to be separable into five component factors—namely, sociability, emotional maturity, masculinity, freedom from care, and intellectual interest. Dr. Vernon points out that it is now generally admitted that an infinite number of factorizations of the same set of variables is possible, but he expresses the hope that factorization may yet help us to make predictions with a maximum degree of efficiency. Not all who read the survey may be as sanguine as this. Dr. Vernon, however, is to be congratulated upon a painstaking and extremely lucid summary of existing knowledge in this very obscure but fascinating field.

IMMUNIZATION AGAINST POLIOMYELITIS

Constant attempts are being made in the United States to devise a means of protecting against poliomyelitis. It will be remembered that one of these—the injection of a living and supposedly attenuated virus vaccine—led to disastrous results, the active virus having undoubtedly caused attacks of the disease, some of which were fatal. More recently attention has been concentrated on rendering the nasal mucosa impermeable to the virus by repeated spraying with astringents, a laborious proceeding which, if carried out with persistence, can scarcely be supposed to leave the nose quite as it found it. A new possibility, which will not, however, be translated to the clinical field without much courage and care, is foreshadowed in experimental results reported by S. D. Kramer, L. H. Grossman, and G. C. Parker.[1] These indicate for the first time that it is possible to immunize monkeys by the nasal route. Natural infection by this route in man is usually overcome without involvement of the nervous system, and it is thus that the majority of adults have acquired immunity. The monkey reacts differently to the intranasal instillation of virus, which either produces poliomyelitis or leaves the animal as susceptible as before. What the present experiments show is that if the virus is introduced into the nose of monkeys after the repeated instillation of pituitrin and adrephine (a mixture of adrenaline and ephedrine sulphate), the disease fails to develop and a resistance to infection is usually produced, indicated both by negative results from instilling virus alone at a later stage and by the demonstration of protective antibody in the animal's serum; some animals also became resistant to intracerebral inoculation. It is not clear why these drugs were chosen or how they act; their antiseptic power is slight, and the fact that the action is local is indicated by failure of protection when they are injected elsewhere. They elicit a cellular response in the mucosa in which eosinophils are prominent. The practical outcome of these observations remains for the present quite uncertain, but they at least suggest that there is no need for a defeatist attitude in this difficult field.

[1] *J. exp. Med.*, 1938, **67**, 529.

A SETBACK TO MEDICO-LEGAL SCIENCE

In April, 1935, the then Home Secretary, Sir John Gilmour, appointed an Advisory Committee on the Scientific Investigation of Crime. Its members were Lord Trenchard (chairman), Lord Atkin (vice-chairman), Lord Dawson of Penn, Sir Russell Scott, the late Sir Edwin Deller, Sir Bernard Spilsbury, Sir Frank Smith, Sir Robert Robertson, Mr. Hugh Lett, Sir Frederick Menzies, and Sir Arthur MacNalty. This expert committee unanimously reported in July, 1936, in favour of the establishment in the near future of a Medico-legal Institute.[1] It declared that the scheme set out in the report was long overdue and should be pressed forward as a matter of public importance. Reinforcing this view, the Senate of the University of London gave unqualified approval to the general principle of creating a central institute for forensic medicine in the metropolis and associating it with a university chair. The scheme provided for three separate but interrelated branches of activity—teaching, routine work, and research. Such a national institute, organically linked with the Faculty of Medicine of the University on the academic side and associated with the Metropolitan Police College laboratory at Hendon in its day-to-day work, would as a matter of course become a centre for research in the medico-legal sphere, to which problems would be referred by outside bodies. Two years have passed, but nothing has been done. Worse than that, the Government, pressed for a sign of its intentions, now announces that it "cannot at the moment consider a scheme which, however admirable it may be, would involve a not inconsiderable capital outlay." The polite correspondence between Lord Trenchard, pleading on behalf of the non-official members of his committee, and Sir Samuel Hoare, the Home Secretary, is reproduced at page 142. There is hardly a capital in Europe that does not possess a medico-legal institute; but England is still too poor, and must await better times or persuade a "public-spirited benefactor" to put up the money.

THE HALF-YEARLY INDEXES

The usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been prepared and will be ready shortly; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who wishes to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Finance Department, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this.

[1] *British Medical Journal*, August 1, 1936, p. 229.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

FRACTURES OF THE SHAFT AND SUBCAPITAL REGION OF THE HUMERUS

BY

T. P. McMURRAY, M.B., M.Ch., F.R.C.S.Ed.

Any of the three types of violence—direct, indirect, or muscular—may cause a fracture of the humerus at any level. Thus a direct blow on the arm may be followed by a fracture at the site of injury, or a fracture at any level may follow a fall upon the outstretched hand. Or, again, a fracture may result from excessive muscular strain, as in the tear fracture of the great tuberosity, in which this portion of the bone is pulled away from the head of the humerus. As a rule, fractures towards either end of the shaft are caused by indirect violence, whereas those occurring towards the middle of the bone may be either of the direct or indirect type.

Fractures of the upper part of the shaft are classified into two main groups: (1) fractures of the anatomical neck, in which the lesion lies external to the articular surface of the head, usually passing through the substance of the tuberosities; (2) fractures of the surgical neck, in which the fracture line is placed below the level of the tuberosities.

FRACTURE OF ANATOMICAL NECK

This type of fracture is seen usually in the elderly patient as a result of indirect violence following a fall on the hand. The fragments are generally impacted, although non-impacted fractures are also seen.

Signs of the Impacted Fracture

In this, the more common type of fracture of the anatomical neck, the presence of impaction between the fragments may lead to great difficulty in diagnosis without the help of a good *x*-ray photograph. Following a fall on the outstretched hand the patient complains of some pain and tenderness in the region of the shoulder, with slight swelling in the injured area and a restricted range of voluntary movements. On passive rotation of the arm the shaft and head of the humerus move in one unbroken mass. On such clinical evidence a mistaken diagnosis of bruising of the shoulder may be given, and the patient be advised to massage the shoulder and to use the arm freely in order to prevent the formation of adhesions. Such a course of treatment, although based on a wrong diagnosis, is often successful, and the presence of the fracture may not be appreciated unless an *x*-ray examination is carried out at a later date. This fortunate result can only occur if the impaction remains firm, but if during the massage and active movements disimpaction occurs, then all the usual signs of fracture become apparent.

Treatment of the Impacted Type

As the patients are elderly disimpaction of the fracture and correction of any deformity should be avoided, unless there is such severe malunion that the subsequent movements of the joint would be gravely restricted. As a rule the extent of the impaction is not equal over the whole line of the fracture, being deeper on the inner than on the outer aspect. It follows that some degree of deformity is present in almost every instance, but not to such a degree as to cause any serious limitation of the range of movement in the joint.

Treatment therefore should consist in the protection of the impaction until union is complete, when any restriction can be diminished by active use of the joint, assisted by gentle passive stretching. A firm triangular sling is applied to the limb, supporting the elbow and preventing the constant strain of gravity, which might cause disimpaction, the hand and wrist being left free for active movements. As an additional safeguard, when the patient is nervous, the arm may be bandaged to the chest by a binder, after a firm pad of wool or felt is placed in the axilla. Fixation is maintained for two weeks, after which the patient is advised to use the arm and is encouraged by gentle massage of the whole of the shoulder girdle.

Signs of the Unimpacted Fracture

The signs present in a case of this type of fracture of the neck of the humerus are very similar to those of displacement of the upper epiphysis. In each the shaft of the humerus is displaced forwards and upwards in front of the small fragment, which can be felt under the tip of the acromion process. In each the arm is slightly shorter than the normal when measured from the acromion process to the external condyle, while the elbow on the affected side is carried behind the mid-plane of the body.

Treatment

The treatment is based on the impossibility of controlling the small upper fragment, which, because of its muscle attachments, is rotated outwards and upwards. As a result of this rotation the rough upper end of the lower

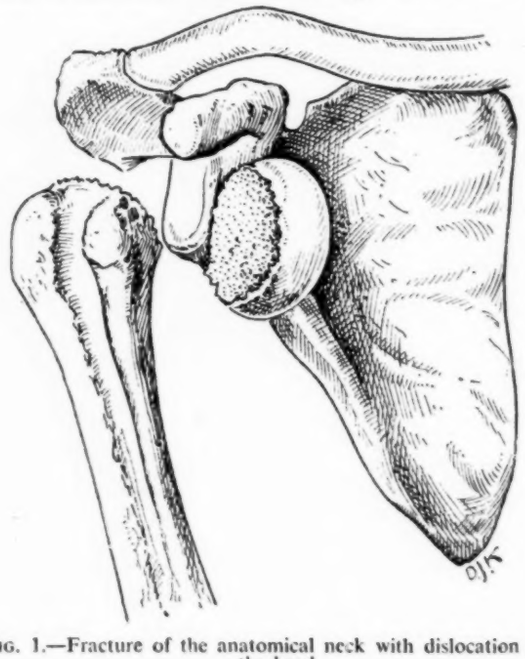


FIG. 1.—Fracture of the anatomical neck with dislocation of the head.

fragment lies against the articular surface of the head of the humerus, which is separated from it by the capsule of the shoulder-joint. Approximation of the two broken surfaces is only possible by abduction and external rota-

tion of the lower fragment. Under anaesthesia the arm is pulled outward from the side into a position of abduction and external rotation, when locking of the fragments can be felt. The arm is then maintained in this corrected position for two weeks until consolidation of the fracture has begun, when gentle movements may be started and the position of adduction gradually assumed. Some little difficulty is met with in after-treatment, which may be prolonged.

FRACTURE OF ANATOMICAL NECK WITH DISLOCATION OF HEAD

A rare but exceedingly troublesome complication of fracture of the anatomical neck of the humerus occurs when the upper capital fragment is dislocated from its position in the glenoid cavity (Fig. 1).

Clinical Signs

With such an extensive injury there is great swelling, pain, ecchymosis, and tenderness round the region of the joint, while the patient supports the injured limb with the other hand. *X*-ray photographs will demonstrate the lesion and indicate the new site of the head of the humerus.

Treatment

Owing to the presence of a fracture through the neck of the humerus it is evident that reduction of the dislocated head into the glenoid cavity cannot be accomplished by any of the ordinary methods of rotation or by extension of the limb. Its replacement, however, is possible by open operation—an extremely difficult procedure—or, more simply, by extension of the limb in the vertical direction.

Reduction by Manipulation.—Under full anaesthesia extension is applied to the limb in an almost vertical direction above the head. Slow steady traction in this direction is continued until the dislocated upper fragment slips back into the glenoid cavity. Occasionally, during the extension of the arm, assistance to the replacement can be given by the fingers, which press the head gently into position through the skin of the axilla. For success of the manœuvre reduction must be attempted within one week of the injury. If a greater interval has elapsed reduction by this method is difficult or impossible. After reduction the fracture is treated as already described. The two raw surfaces are interlocked so that the limb may be brought down to a position of 50 degrees' abduction, at which redisplacement is improbable. Later the range of movements is restored by active use.

OLD FRACTURE DISLOCATION

When the displacement has been present for months, or years, the head of the humerus is usually united firmly to the side of the shaft. The arm is held away from the side, and movements between the humerus and the scapula are lost. Reduction of the displacement is then impossible, and the only indications for active treatment are the presence of signs of pressure on the nerves or vessels of the axilla, or limitation of movement of the joint.

Treatment

When the signs of pressure on the axillary contents are slight considerable improvement often follows a gentle manipulation of the shoulder under anaesthesia. If, however, the signs of pressure are outstanding features such treatment is useless, or even dangerous, and relief is only possible by removal of the head of the humerus.

The operation is a very extensive and difficult one, with the possibility of injury to adherent vessels or nerves, but if carried out slowly and carefully the result is satisfactory. After removal of the head of the humerus the stability of the shoulder is definitely diminished. Passive movements are free, but stable active movements are negligible. The operation does, however, succeed in its object of relieving the pain or swelling of which the patient complained, and to that extent it is advisable.

FRACTURE OF SURGICAL NECK

A fracture of the shaft of the bone occurring in the upper sixth and below the epiphyseal line is described as a fracture of the surgical neck. It may follow on direct or indirect violence, and, unlike fracture of the anatomical neck, usually occurs in vigorous adult life, and is not as a rule impacted.

Clinical Signs

In addition to the usual signs of fracture, such as pain, swelling, ecchymosis, and spasm of muscle, the upper end of the shaft can be felt lying in front of the head, forming a mass on the anterior aspect of the joint, which rotates at the line of fracture without movement of the head.

Treatment

If displacement of the fragments is not present treatment should consist in fixation. For this purpose the wrist is slung from the neck by a halter, the elbow being flexed to right angles, the weight of the forearm acting as a steady extending force on the arm. Lateral movements of the fractured surfaces are prevented by the use of three moulded metal splints, which enclose the shoulder and arm down to but not including the elbow-joint. This protection is maintained for six weeks, when the splints may be removed, movements being restored by voluntary effort, the range increasing with the diminution of tenderness in the fracture.

When displacement is present reduction under full anaesthesia is simple by the application of steady traction to the limb in slight abduction. Locking of the fragments can be appreciated, and redisplacement is unlikely as the fractured surfaces are usually more or less transverse at this level. When the reduction is satisfactory the arm can generally be adducted without risk of redisplacement, fixation with three metal splints forming an adequate protection and preventing any recurrence of deformity.

FRACTURE OF GREAT TUBEROSITY

Owing to its protected position under the muscular mass of the shoulder-joint, fracture of the great tuberosity is not, as a rule, caused by direct injuries to this region, but follows overaction of the abductor and rotator muscles, which are inserted here. The fracture is usually present as a single lesion, but it may be accompanied by dislocation of the head of the humerus.

Signs

The diagnosis rests on the radiographic appearance, and in the absence of a dislocation little can be elicited clinically beyond the presence of swelling and tenderness under the acromion, with pain on passive movements of the arm. When dislocation is also present this lesion may overshadow the comparatively small fracture, and considerable disability results from the treatment of the injury as a simple dislocation without recognizing the existence of the bony lesion.

Treatment

As it is impossible to control the detached fragment and bring it into apposition with the body of the humerus, it is necessary that the rough surface of the humerus should be brought into contact with the broken tuberosity. This is easily done by abduction and external rotation of the arm to an angle of 80 degrees. In this position replacement is complete, and if it is maintained for three weeks voluntary movements can be instituted and the normal range of movement restored.

FRACTURE WITH DISLOCATION

Here the head of the humerus lies in the subcoracoid region, from which it can be replaced in the glenoid cavity by rotation or by slow steady traction. If the dislocation were the sole lesion after-treatment would consist in the fixation of the arm to the side until the torn capsule had healed.

Rest in adduction, which would be ideal in the treatment of a simple dislocation of the shoulder, produces a wide separation of the detached tuberosity. It is therefore necessary to rest the arm on a frame in a position of 50 degrees' abduction for at least two weeks, when the angle of abduction can be increased to 75 degrees, at which the arm is maintained for a further period of two weeks before the resumption of voluntary movements.

FRACTURES OF SHAFT OF HUMERUS

In considering the treatment of fractures of the shaft of the humerus, whether transverse, oblique, or spiral, one is apt to think of fractures of the femur. In each there is a single bone, a fracture of which leads to shortening of the limb with overlapping of the two fragments, Although the conditions are similar up to this point, the analogy cannot be followed any further. In fractures of the femur the shortening is maintained by the protective spasm of muscles which are powerful enough to support body weight, whereas in the case of a fractured humerus the resistance to reduction is much less.

In fractures of the humerus extension with weights, pulleys, or elastic is never necessary. Full length of the arm and correct alignment can be obtained by using the weight of the forearm as an extending force. The use of greater weight than this is not only inadvisable but in some cases positively dangerous. Non-union is reported as a common sequel of fracture of the shaft of the humerus by the same surgeons who advocate strong extension as the means of reducing the displacement.

Treatment

The weight of the forearm is used by slinging the wrist from the neck by means of a halter, the elbow being kept at a right angle. By this simple means the full length of the arm is obtained, but only if the lateral movements of the rough bony ends are prevented. In most fractures of the humerus the line of fracture is not transverse, so that locking of the fragments is not usually possible. There must therefore be a continuation of the action of the weight of the forearm if full length is to be maintained.

The diagram (Fig. 2) shows the simplest and most efficient method of producing both of these actions on the fractured bone. The wrist is slung by a halter from the neck, while the broken humerus is protected by three metal splints, surrounding the limb from the top of the shoulder to the level of the epicondyles. In following such a method no triangular sling is used, as this would support and lift up the elbow-joint, thus destroying the extending force of gravity. In the case of a man the shirt must not be tucked into the top of the pants, an arrangement which is similar in action to the use of the triangular sling. The patient is encouraged to stand up or sit upright without any support under the elbow, and at night correction is continued by propping him up in the semi-erect position.

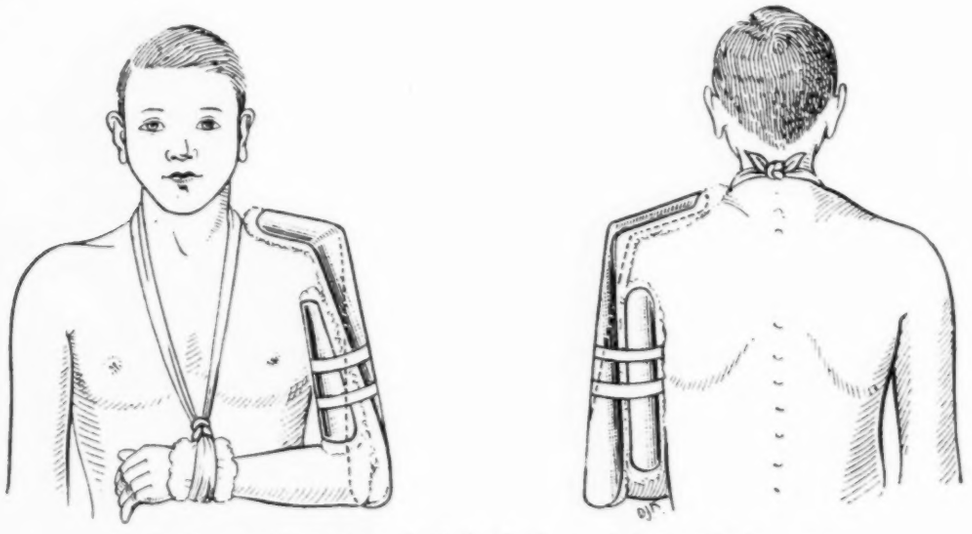


FIG. 2.—Front and back views of splinting for fractured shaft of the humerus.

If straight splints are used for the lateral protection of the bone, union with deformity will almost certainly result. The reason for this is clear: a straight splint applied on the outer aspect of the arm touches the bulge of the shoulder-joint and the external condyle of the humerus, leaving the middle of the bone unsupported unless this be pulled towards the splint into a position of deformity. If, however, mouldable metal splints are used these can be twisted on their long axis so that they lie on top of the acromion, on the outer aspect of the shoulder-joint, and towards the back of the bone at its lower end. The small splints used on the inner and anterior aspect

are given a similar twist, so that the bone is supported in its whole course and its normal alignment retained.

Treatment is continued in this way for six weeks, when, as a rule, the splints may be removed and the patient encouraged to use the arm for small active movements, the sling usually being retained as a support for another three or four weeks. Complete consolidation of the humerus is to be expected in nine or ten weeks, and a full range of movement very soon after this. Occasionally there is some restriction of movement in the shoulder, a condition which may require a course of physiotherapy.

COMPLICATIONS OF FRACTURED HUMERUS

Non-Union

The occurrence of non-union following a fracture of the humerus can be attributed to any of the usual causes, such as want of fixation of the fractured bone, want of apposition, or the presence of pathological changes in the bone, but in many instances non-union is directly due to an error in treatment.

There are two common causes of non-union which are not sufficiently recognized: (1) the widespread removal of partially detached fragments of bone in a compound fracture; (2) the application of excessive traction to the fractured bone, producing wide separation between the fractured surfaces.

Treatment.—The treatment of non-union depends largely on the length of time that has elapsed since the occurrence of the fracture. When this period does not exceed five months union frequently follows the use of efficient treatment, as for a recent fracture, reinforced by the stimulation of passive venous congestion at the site of fracture. The method is simple: a thin rubber band is placed round the arm, next the skin, above the site of fracture before the splints are applied, and each day this band is tightened for three periods of half an hour, without interfering with the fixation of the splints. The congestion must be of such a degree that the hand becomes swollen and bluish but not painful. This method is continued for at least three months before deciding whether union will occur or not. If, however, more than six months have elapsed bone grafting holds out the only hope of union and should be carried out without delay.

Nerve Involvement

Any of the nerves in the arm may be involved at the time of the fracture or at a later date, either through injury by the rough bone ends or through compression in callus or scar tissue. The musculo-spiral nerve, on account of its position close to the bone, is involved more often than either the median or the ulnar nerves.

Signs.—When the function of the musculo-spiral nerve is lost all the muscles on the extensor aspect of the forearm lose their power of voluntary contraction, with or without paralysis of all or part of the triceps, according to the site of the lesion.

Treatment.—When the clinical examination indicates that such an injury is present the paralysed muscles must be protected from overstretching by placing the hand and fingers on a long curved splint, the wrist being held in dorsiflexion with the metacarpo-phalangeal and inter-phalangeal joints in slight flexion. Gentle massage is given to these protected muscles, the progress of the nerve injury being gauged by repeated electrical examinations of the paralysed muscles. If from such examinations it is evident that the nerve is torn, an operation for nerve suture or nerve-freeing should be carried out without delay. Very occasionally, when there has been widespread destruction of nerve tissue as in a severe compound fracture, it may be impossible to perform a satisfactory suture of the divided nerve, and improvement in the function of the hand may only be possible by transplanting the tendons of some of the flexor muscles of the forearm to the dorsum so that they act as extensors rather than flexors of the wrist and fingers.

Nova et Vetera

SURGICAL FORCEPS DOWN THE AGES

The History of the Forceps: An Investigation on the Occurrence, Evolution, and Use of the Forceps from Prehistoric Times to the Present Day. (With a Summary in Danish.) By Vilhelm Moller-Christensen. (Pp. 298; 441 figures. A Chronological Table. 20s. net.) London: Humphrey Milford; Copenhagen: Levin and Munksgaard. 1938.

Dr. Vilhelm Moller-Christensen says that he invented a pair of forceps when he was an assistant physician in Denmark in 1931. Curiosity led him to inquire into the history of forceps, and like most people he thought there were only a few varieties. Investigation soon showed him his mistake, and he has since travelled far and read much to produce this book on their history and evolution.

The result of his inquiries has been to show that forceps were in use long before the invention of scissors, and that they are found in Egypt and Mesopotamia about 3300 B.C. The different types evolved were employed for epilation, for the removal of foreign bodies, and for dealing with the smoky wicks of the oil lamps then in common use. The epilation forceps were used alike by men and women, forming a part of their toilet sets. Everyone seems to have carried such a set, for there must have been many who preferred to pluck out their hairs with a pair of forceps rather than be shaved with a flint or bronze razor. Two different types were developed—the Cypriot and the Mycenaean—about a thousand years later. Dr. Christensen thinks they were not known to the Egyptians, but years later the Mycenaean type found its way to Italy and Scandinavia. Thanks to the work of Dr. J. S. Milne the surgical instruments of Greece and Rome are fairly well known. Dr. Christensen has consulted his book and is able to show from personal examination that a pair of bronze forceps in the Copenhagen Museum is more likely to have been used for drawing the stumps of teeth than as epilation forceps, as was stated by Dr. Milne.

Surgical forceps have not undergone any great change during the last 5,000 years, though it was a long time before the blades were ridged, an improvement which materially increased their gripping power. It was longer still before they were provided with a ring or slot to keep them closed and make them self-adherent. When Dr. Christensen was in England he visited the British Museum and the Wellcome Medical Institute. Of the twenty pairs of forceps in the British Museum collection he thinks that seventeen are incorrectly described as to their use. For some reason he did not see the fine examples in the historical collection of surgical instruments at the Royal College of Surgeons in Lincoln's Inn Fields, where he would assuredly have been very welcome. Neither has he read the late Mr. Alban Doran's article on the development of the pressure forceps—Webber, Koeberlé, Péan, and Spencer Wells—which appeared in the *British Medical Journal* in 1915 (**1**, 555); indeed, there is no mention at all of Spencer Wells.

The book is very useful as a guide to a minute subsection of medical history. There are many illustrations, a chronological table showing the approximate dates of different types from prehistoric times to A.D. 1000, a bibliography, and indices of persons and subjects.

THE BIRMINGHAM HOSPITALS CENTRE

ROYAL OPENING CEREMONY

The opening of the Birmingham Hospitals Centre and the Medical School Buildings of the University by the Duke of Gloucester on July 14 sets the seal upon a great enterprise which was first mooted eighteen years ago.

The new buildings at Edgbaston, two miles from the centre of the city, on open ground 500 feet above sea level, and just to the north-west of the University, make an inspiring group even now, although the scheme is far from complete. Nothing has been spent in useless adornment, but the very simplicity of the treatment and the harmonious massing of the several buildings give it all the needful dignity. The three main structures—the hospital itself, the nurses' home to the north, and the medical school buildings to the south—fit in perfectly with one another, so that the eye is satisfied from every aspect. All the buildings are in a yellowish-grey stone, disappointing at first glance when compared with the warm red of the University a few hundred yards away, and yet not unpleasing. On three sides of the hospital stone balconies have been constructed on every floor of the medical and surgical wings for the outdoor treatment of as many patients as possible, and these give a decorative relief to the plain wall surfaces.

Side View of Hospital and Nurses' Home.

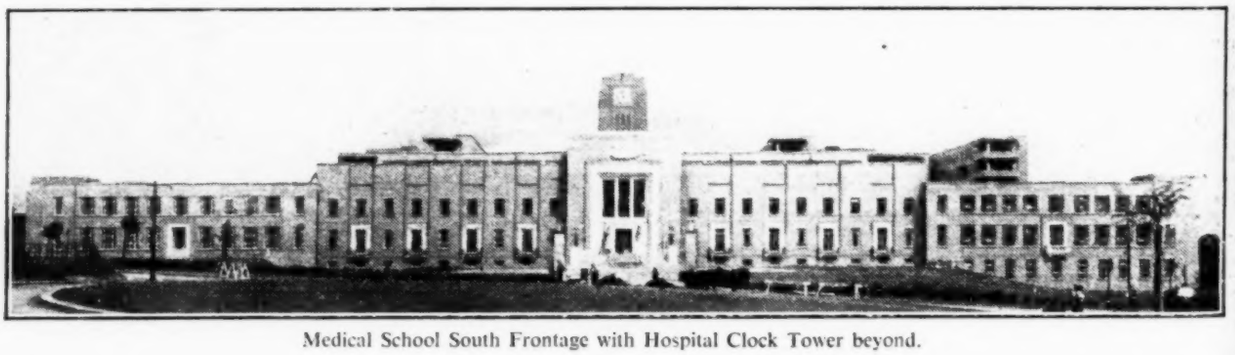
Evidently the scheme owes something in its architectural conception to the Medical Centre of New York City in which many hospitals and schools are associated; but there the emphasis is on the perpendicular line, whereas at Birmingham it is on the horizontal. The hospital building is of seven and eight stories, as compared with the twenty-two stories of the Presbyterian Hospital, the original unit of the New York Centre. The architects, who submitted the winning design in open competition, are Messrs. Lanchester and Lodge of Bedford Square, London. Mr. H. V. Lanchester is the designer of the University of Leeds, the Cardiff municipal buildings, and the reconstruction of St. Bartholomew's.

The First Instalment

The buildings which have been opened this week are a first instalment. Much remains to be added before the Centre corresponds fully with the architects' original plan. The new hospital at present will provide just over 500 beds, whereas the completed hospital is planned to accommodate 740. The buildings so far finished and opened include the central administrative block, with offices, stores, and large central kitchens, dominated by the clock tower, which serves the utilitarian purpose of water storage. The medical wing to the east of this block is also complete, as is the surgical block to the west with the exception of one of the forward projections. There remain to be added, on the west side, a casualty department and ward and the large out-patients' department, and, on the east, a paying patients' block of 100 beds; also, to project from the centre of the building southwards, the chapel. Opposite the principal entrance to the hospital (north), on the other side of the fine roadway, is the nurses' home, a large seven-storied structure, which when complete will have on the one side of it a smaller night wing, and on the other a home for the hospital maids. A dispensary is at present being built as a link between the surgical wing and the out-patient department.

The New Medical School

To the south of the hospital, at a lower elevation, separated by a wide and pleasant court and garden space, which will be used for convalescent patients, are the Medical School Buildings. These are only two, or in some parts three, stories in height, so that they do not rob the hospital of any sunshine. But the main frontage extends for a full 600 feet. On either side of the entrance block is a square of buildings surrounding an open central court. If these school buildings stood by themselves they would be regarded as a triumph of architecture; they are dwarfed, however, by the great mass of the hospital behind them. On one side are located the anatomy and physiology departments and on the other those of bacteriology and pathology, and the museum and library overlook the road leading to the University. Three well-equipped lecture theatres have been provided, and there are large laboratories for each of the four principal sections. The building was still in the workmen's hands on the occasion of our visit, but it was evident that teachers and students will enjoy every accommodation and facility. Covered ways and corridors connect the medical school with the hospital.



Medical School South Frontage with Hospital Clock Tower beyond.

Internal Hospital Arrangements

The 500-bed hospital now opened, although ultimately the bed accommodation will be increased to half as much again, is nevertheless complete with all auxiliary and ancillary services. It embodies the latest ideas and experience in design, planning, and administration. The beds are to be organized in units of sixty, each unit being complete in itself. Of the sixty beds, thirty will be for men and thirty for women; each thirty will be made up of one ward of sixteen beds, two of four beds, and three of two beds. The largest ward in the hospital will not

JAMES F. BRAILSFORD: BRODIE'S ABSCESS AND ITS DIFFERENTIAL DIAGNOSIS

(For legends, see Text)

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6

FIG. 7

FIG. 8

FIG. 9

FIG. 1.—Case 9; aged 21. Menarche at 16; Menstruation 3/28 regular for four years. Since then periods have been irregular. Endometrium before progesterone therapy. (Magnification × 50.)

FIG. 2.—Case 9. Endometrium before progesterone therapy. (Magnification × 260.)

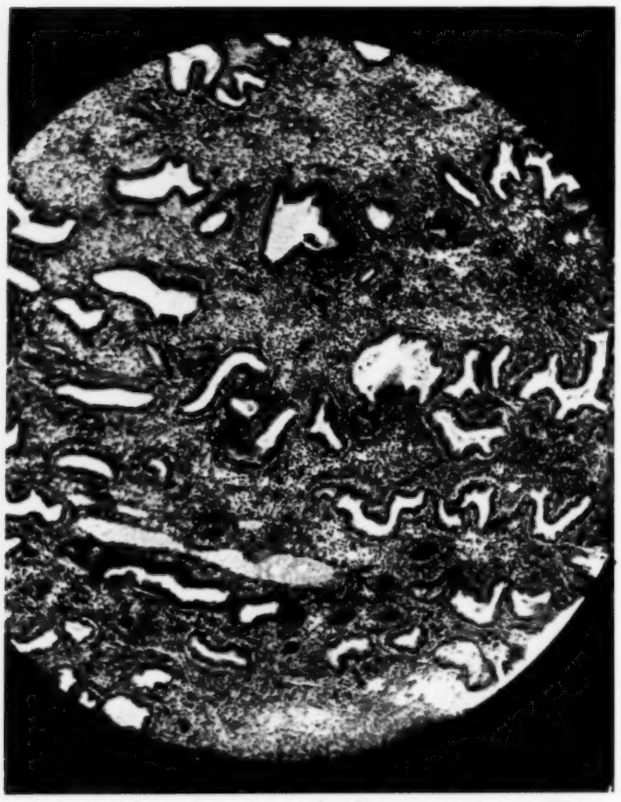


FIG. 3.—Case 9. Endometrium after 25 mg. progesterone. (Magnification × 50.)

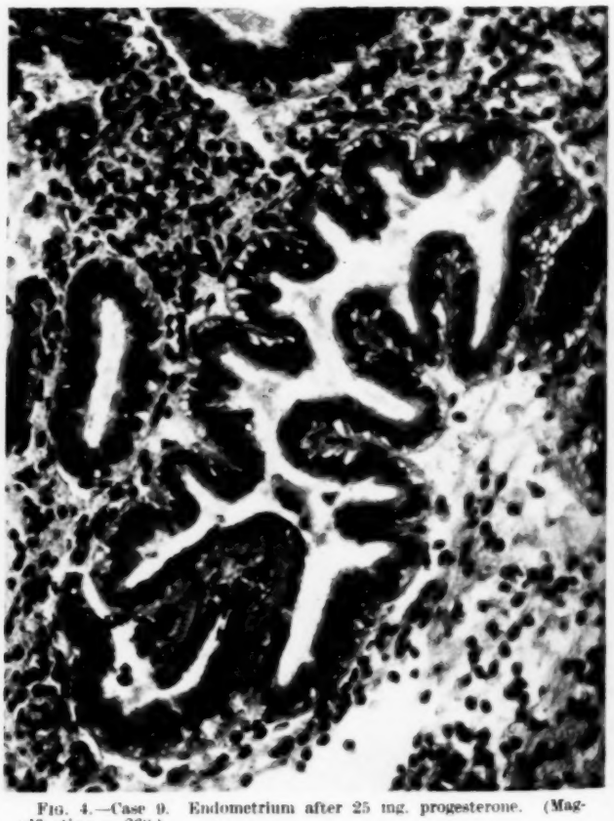


FIG. 4.—Case 9. Endometrium after 25 mg. progesterone. (Magnification × 260.)

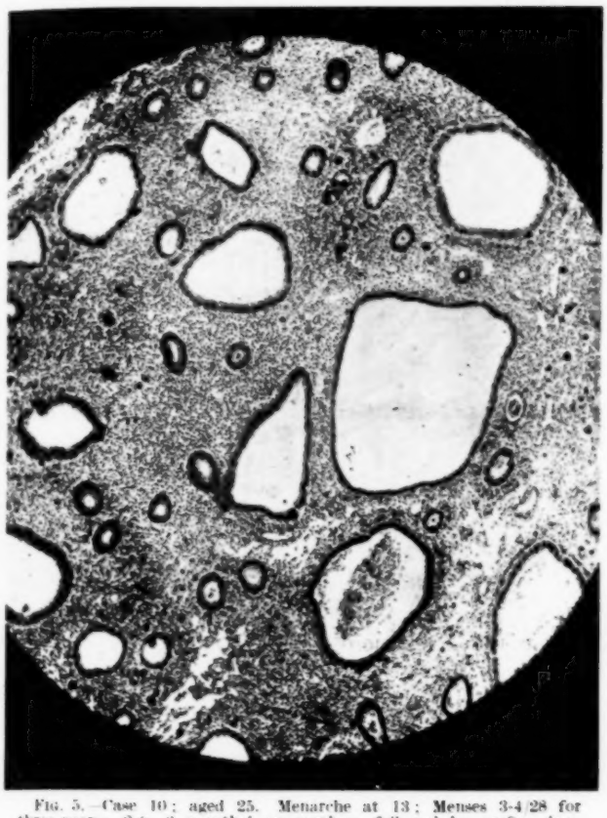


FIG. 5.—Case 10; aged 25. Menarche at 13; Menses 3-4/28 for three years; 2 to 3 months' amenorrhoea followed by profuse loss. Endometrium before progesterone therapy. (Magnification × 50.)

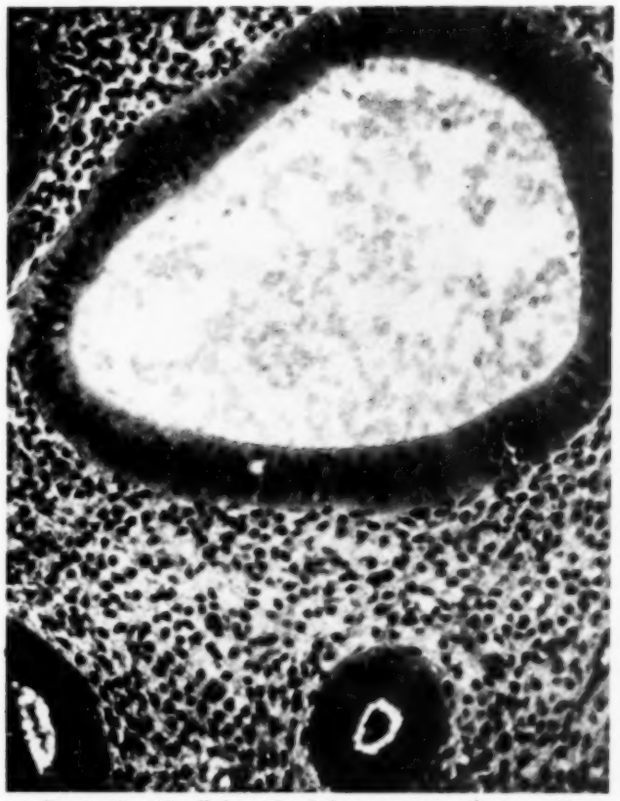


FIG. 6.—Case 10. Endometrium before progesterone therapy. (Magnification × 260.)

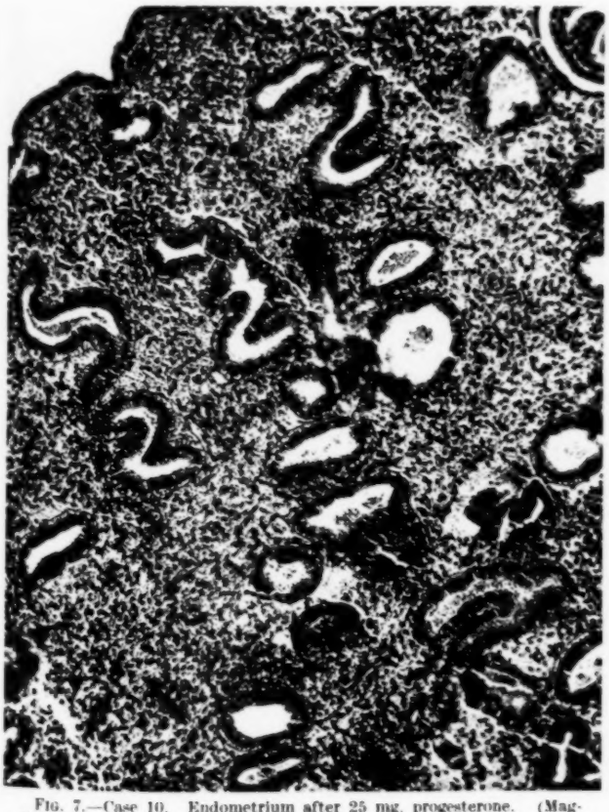


FIG. 7.—Case 10. Endometrium after 25 mg. progesterone. (Magnification × 50.)

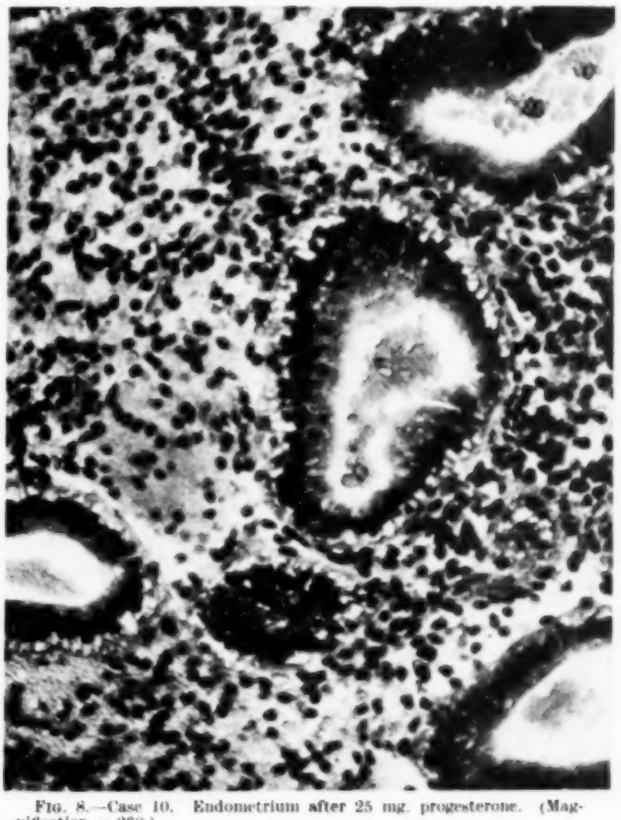


FIG. 8.—Case 10. Endometrium after 25 mg. progesterone. (Magnification × 260.)

W. SAMPSON HANDLEY: CHRONIC MASTITIS AND BREAST CANCER: A FAMILY HISTORY

FIG. 1.—Sister C. Right breast: Diffuse innocent papillomatosis of the ducts. Magnification × 120. (Photo by Bland-Sutton Institute.)

FIG. 2.—Sister C. Right breast; Incipient carcinoma. Duct distended by epithelium, infiltration beginning. Magnification × 200. (Photo by Bland-Sutton Institute.)

MAX GREENBERG: PARASITIC FOETUS SUCCESSFULLY REMOVED BY OPERATION

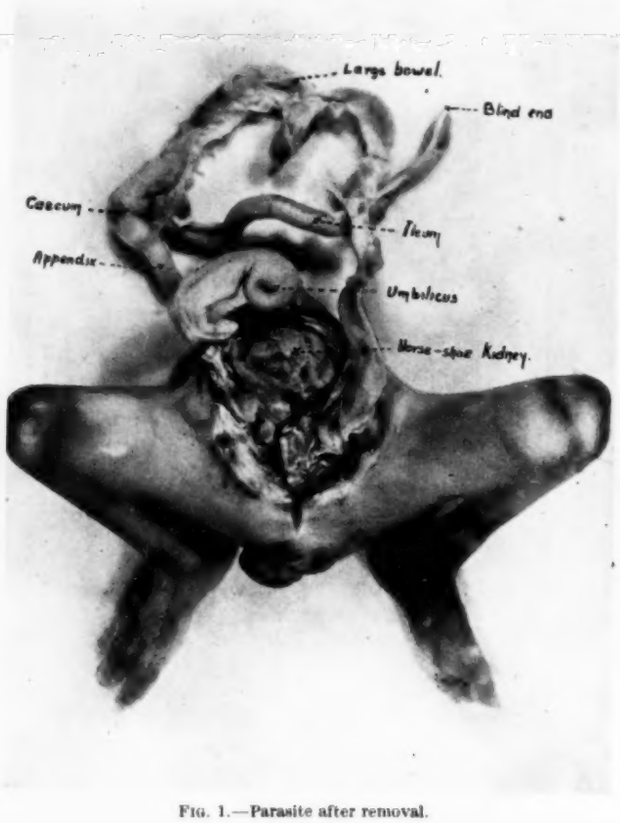


FIG. 1.—Parasite after removal.

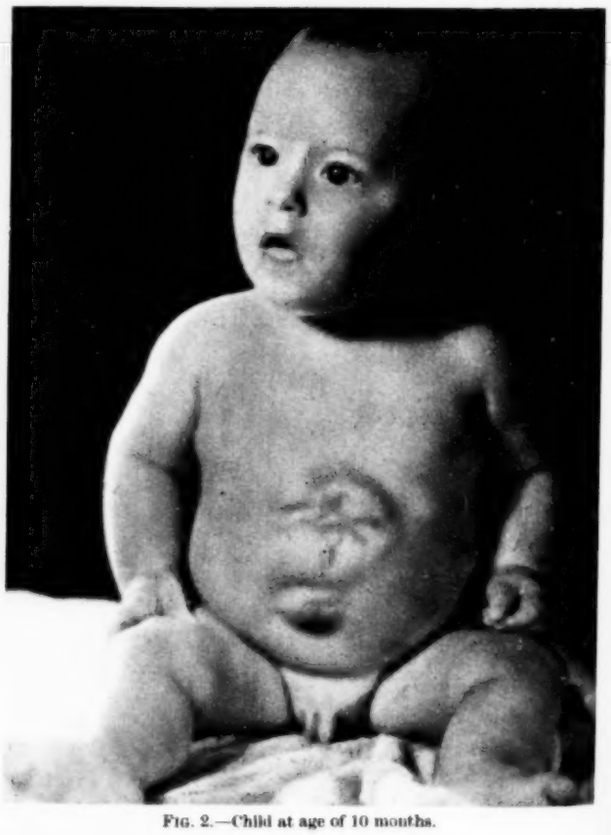


FIG. 2.—Child at age of 10 months.

have more than sixteen beds. There will be six general operating theatres—one on the floor of each of the surgical units—as well as departments for massage and remedial exercises, *x* rays and radium, electrotherapy, hydrotherapy, and other special purposes. The beds as far as possible are being arranged parallel to the windows instead of in the usual right-angle position, and the heads of the beds are against partition screens projecting into the ward some eight feet from the wall. It is intended that each member of the senior staff shall be assigned one of the units of sixty beds, with accessory services, clinical laboratory, record room, and so forth. When the completed hospital is functioning, of the 740 beds, 240 will be medical, 300 surgical, 60 children's, 60 gynaecological and obstetric, 60 special (ear, nose, and throat, ophthalmic, dermatological), and 20 casualty. In addition there will be the 100 beds in the paying patients' block, still to be constructed. Fifty of these beds will be in single rooms. This block will be so related to the hospital that all essential services may be obtained with the least inconvenience to the patients.

The nurses' home, when the night wing is added, will accommodate 460 nurses, giving each of them a separate bedroom. There will be separate bedrooms also in the maids' home for 100 maids. Part of the nurses' home will be a training school, with lecture theatre and demonstration rooms.

It should be added that it is expected that it will be October or November before the Centre opens for the first instalment of patients. The Birmingham United Hospital (the General Hospital and Queen's) is undertaking without avoidable delay the responsibility for the new buildings and service, but the speed is necessarily regulated by rate of recruitment of nursing and domestic staff. To provide an entirely new and complete organization to full capacity will take some time, especially in a hospital of such modern design and containing all the numerous departments connected with the special needs of a medical school.

The Finance of the Scheme

On the financial side the Centre, being a unified institution, not one hospital appealing against others with competing claims, has been fortunate in enlisting the enthusiastic support of the whole community. The civic authorities, headed by successive Lord Mayors since the appeal began in 1930, have been particularly co-operative. The cost of the scheme with the 740-bed hospital is one and a quarter millions, one million of which represents the cost of the present first instalment. That million, to within the last £30,000, has been secured. A few days before the opening the Lord Mayor received a letter from an anonymous well-wisher promising £10,000 to cover certain additional items of expenditure if the outstanding £30,000 were forthcoming. Thanks largely to the efforts of the secretary of the Centre, Captain J. E. Stone, whose writings on hospital administration are well known in the hospital world, the appeal expenses represent just under 1 per cent. One-sixth of the amount of the appeal fund is credited to the University for the building of the school, the maintenance of which is the University's responsibility, no part of the expenditure falling upon the hospital authorities. When the University, a few days before the opening, marked the occasion by conferring certain honorary degrees, it was mentioned that Lord Nuffield, who received the degree of Doctor of Law, had been the chief contributor, and next to him the largest single subscriber had been Mr. Harry Vincent, a Birmingham business man, for eight years the honorary treasurer of the appeal and one of the hardest workers on its behalf.

The words of Dr. Robert Hutchison, President of the Royal College of Physicians of London (who with Sir Cuthbert Wallace, President of the Royal College of Surgeons of England, and Sir Edward Mellanby, Secretary of the Medical Research Council, also received honorary degrees), on the same occasion may be quoted:

"It [the idea of forming the Hospitals Centre] was an idea of great imagination carried out with all the practicality one expects in Birmingham, and I am sure it will not fail not only to facilitate the treatment of the sick but also to improve the teaching of the student and extend the facilities for research. It cannot fail to enhance still further the already high reputation of Birmingham as a teaching centre. Those who practise in the metropolis with its woefully scattered medical resources view not only with satisfaction but with a considerable degree of envy Birmingham's Hospitals Centre. I believe that the example you have set here to medicine in the concentration of medical resources in one quarter cannot fail to be widely followed in other cities."

Opening by the Duke of Gloucester

The arrangements for the royal opening on Thursday of this week had to be revised owing to the illness of the King, in whose place the Duke of Gloucester, accompanied by the Duchess, performed the ceremony. The spaciousness of the setting permitted 8,000 people to be present. It was arranged that the Duke and Duchess, driving from New Street station, should spend exactly one hour at the Centre, first entering the Nurses' Home, where certain presentations were to be made by Sir Charles Grant Robertson, chairman of the Executive Board of the Centre and Vice-Chancellor of the University. The list of presentations here included members and officials of the Board, representatives of the architects, engineers, contractors, and works staff, the house governor and matron, and members of the honorary medical staff of Birmingham United Hospital. After the presentation of an address by the Lord Mayor, Their Royal Highnesses proceeded to the main door of the administrative block, opened with a key presented to the Duke by the architect, and then, passing through the vestibule, visited one of the large general wards of sixteen beds and an operating theatre. The further programme included an inspection of the buildings of the Medical School, where the Chancellor of the University, Viscount Cecil of Chelwood, presented the Dean of the Faculty (Dr. Stanley Barnes), the professors, and other officers.

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NATIONAL FOOD POLICY

Within recent weeks two documents have been published which bring into prominence the imperative need for a national food policy planned not only to safeguard the health of every citizen in times of peace but his existence in times of war. The first is a *Report on Nutrition*,[1] issued by the British Association for Labour Legislation. "It is an effort to carry out the instructions of the Assembly of the League of Nations and the International Labour Organization to the various nations of the world to study the problem in their own country." It sets out clearly and concisely the relevant facts in regard to this problem as it exists in Great Britain. An outstanding feature of the report, and one that lends to it a high value, is the emphasis laid on the relation of British agriculture to national health: a relationship which is, we consider, fundamental to the whole health question.

The second document is a special report, entitled "Towards a National Food Policy," issued by the Committee against Malnutrition,[2] and recommended to public attention by a number of authorities on the subject of nutrition. It emphasizes the need for adjustment of national economy towards the provision of an adequate guaranteed

[1] Obtainable from the Hon. Secretary, 55, St. Mary's Mansions, Paddington, W.2. (Pp. 118; price 1s. 6d.)
[2] Bulletin No. 27, July, 1938. 19c, Eagle Street, Holborn, London, W.C.1.

diet to all sections of the community. It touches upon the range of possible measures that might be taken to this end; measures which the public—medical, scientific, and lay alike—is invited to examine and discuss. The problem is a national one upon which the public as a whole must make up its mind.

The relevant facts and suggestions, as set out in these documents, may be summarized under the following headings in order, as we think, of importance: food production, food distribution, cheapening of basic foodstuffs, the raising of incomes in certain classes of the community, and palliatives.

National Food Production*

The work of the scientific investigators of nutrition on the one hand, and of public health officers on the other, has demonstrated that there exists among our population a large amount of indifferent health or actual disease and of predisposition to infection due to dietetic malnutrition; defects that can be obviated by the general adoption of a more balanced dietary which will include an increased consumption of materials—particularly fresh vegetables and dairy produce—which are normally products of our own agriculture. Of these materials our own agriculture does not produce nearly enough for national needs, although our conditions of soil and climate are particularly suited to their production. This of itself suggests that some selection can be exercised in the national interest as to the crops that should be grown and the stock to be kept, provided always that the farmers are assured of an adequate return for their products.

Secondly, agriculture has become an assisted industry; the aid from the State in the way of duties, subsidies, or other relief has been reckoned to be in the order of £40,000,000. It is then not unreasonable that the State should direct the incidence of this assistance so as to ensure the production of the materials essential to national welfare. At present it does not do so. Owing to the operation of subsidies much of the best land in England is being cropped with wheat and sugar beet, though it is so eminently suited to the growth of vegetables. Wheat and sugar are among the cheapest products in the world's market, the easiest to transport and store. Neither the everyday need for them nor the threat of war justifies the expenditure of such vast sums in subsidizing their home production. As it is the nation consumes vastly more sugar than it needs. If war emergency arises we are still under the necessity of importing the bulk of our food, and economy of shipping tonnage becomes the determining factor in what we can afford to import. Wheat and sugar are of all foodstuffs the most concentrated, and come from the Americas across the one sea that is likely to be open. War emergency should be met in another fashion: that of bringing into cultivation a great deal of the now neglected and unimproved grassland of England. It would therefore be sound national policy to transfer the subsidies now being accorded to the growth of wheat and sugar to other branches of our agriculture, such as milk, vegetables, and meat.

Thirdly, the agriculture of this country is not flexible enough. Flexibility of farming demands the ability not only to produce a particular commodity of a particular quality at a given time, but also the ability at all times to utilize to the maximum of advantage, and with the minimum of waste, the urine and faeces of the grazing animal for the maintenance of soil fertility with the least possible risk of disease to the stock concerned. Our arable area—and that is our only flexible area—contributes but 21.6 per cent. to our land surface; rough and hill grazing, than which nothing could be less flexible, contributes 32.1 per cent.; and permanent grass, but little more flexible than hill grazing, contributes as much as 31 per cent. The black patch—and it is the largest patch—is our huge area in permanent grass, and in easily improvable rough and hill grazing: *no less than sixteen million acres in England and Wales*. The cultivation of fruit, vegetables, and cereals is denied to a huge acreage of the country. Permanent grass and rough grazings flow like a sea right up to the very doors of our highly populated industrial centres. These great centres of population of necessity obtain their vegetables from considerable distances, and hence the populace never, or hardly ever, eat vegetables that are fresh in the true meaning of the word. Further, the fertility of this huge acreage cannot be properly maintained; nor can the health of the grazing animals. Permanent grass has a short growing season and, therefore, a short carotene-giving season. The health of animals is probably, to a very real extent, a function of the length of the effective outdoor grazing season.

In an emergency the prime need is calories and the greatest possible production of energy-providing foodstuffs. This necessity makes peremptory demands for a system of farming which is flexible. It is only by a mass attack on our permanent pastures that we can adequately safeguard our supplies of health-giving foods and hope to meet an emergency in respect of calories. If the country is so minded it can without further ado enormously increase the gross output of its food supplies, add almost immeasurably to the health units contained in such output and permanently benefit British agriculture. Moreover, this greater production meets another national requirement in that it involves a high rate of employment on the land. The first essential, then, in any prudent national food policy is to adapt our agriculture to national needs. These needs are clear, their satisfaction is imperative, the neglect to satisfy them is the extremity of folly.

Food Distribution

The protective foods the population needs are such as can be produced here to the permanent advantage of British agriculture. But for large sections of the population their cost is prohibitive. It is not the cost of their production but that of their distribution that stands in the way of cheapness to the consumer. "The whole of our system of trading in these perishable goods—commission agents, salesmen, wholesale merchants, and retail traders—is out of date and is paying extravagantly for services rendered. . . . Much of it has grown up to accommodate the laziness, lack of forethought and real economy in the people themselves; there are no 'robbers of the poor' to be denounced for the expensiveness from which the 'poor suffer.'" A complete census of distribution is an essential preliminary to a thorough rationalization of the distributive trade. The Committee against Malnutrition suggests that basic food should be taken deliberately out of the normal field of supply and demand, since food is a primary necessity and must be guaranteed inalienably to all. Basic food should be marketed through public concerns: boards should be established to handle the whole distribution of food from the point of production or import to the home of the consumer, the boards to be under the control of a Food Minister or of some existing Ministry such as the Board of Trade. The system of

* Much of the subject-matter under this heading is in the language of the Report on Nutrition by the British Association for Labour Legislation.

centralized wholesale distribution presents great opportunities of economic organization, but if any preference is to be granted to such a system in legislation, adequate assurances should be obtained that these opportunities will be taken. Space does not permit further reference to this matter, the urgency of which is self-evident.

Cheapening of Protective Foods

Measures to this end are concerned mainly with lowering the cost of distribution of protective foodstuffs and with increasing the demand for them. Demand is largely a question of education and of income. The problem of nutrition is fundamentally one of poverty, though ignorance, indifference, and thriftlessness are not unconnected with it. To solve it we must banish poverty and ignorance. Large numbers of our people have not the means wherewith to purchase food that will satisfy their physiological needs. For these the raising of incomes becomes a question demanding close consideration.

The Raising of Incomes

A rise in the level of working-class incomes is almost invariably accompanied by a wider expenditure on the necessary protective foods. But it does not, of course, follow that the whole of the margin is expended on foodstuffs. The Report on Nutrition (British Association for Labour Legislation) affirms that the standard of "national nutrition" could be raised by raising incomes, lowering the prices of foodstuffs, or reducing the fixed and prior charges on the family purse, such as rent, rates, and insurance premiums. The possibility of introducing a system of family allowances and of securing wider adoption of one or other of the various rent-rebate schemes should, in the opinion of the authors of this report, be investigated. The Committee against Malnutrition, on the other hand, comes to the conclusions that an attempt to ensure adequate nutrition through raising incomes can at best only have partial and indirect results. A scheme of family endowments only affects one section of the population. A rise in other working-class incomes affects, or is held to affect, the course of employment; it is also considered frequently to influence the prices of food and other necessities by leading to a price rise that effectively swallows up the benefits from higher incomes. Thus in any case it would be necessary for the price system to be manipulated by Government intervention if any advances in average working-class incomes are to be of benefit to the consumer.

Palliatives

The present method in this and other countries of dealing directly with the problem of nutrition is that of providing free or cheap milk and other foodstuffs to the necessitous in certain sections of the community. The method is a negative one; it serves to treat or forestall in some measure the worst degrees of malnutrition as we experience them; it does not envisage a situation wherein malnutrition is practically impossible. In the second place, and associated with the first consideration, the schemes have been and still are administered in the spirit of the old Poor Law, with the accompaniment of inspectors, income tests, and so forth. Thirdly, only certain sections of the community—for example, school children and expectant and nursing mothers—are contemplated by the schemes, and of necessity there must be numerous gaps and omissions. Even at the best the schemes frequently work in a sporadic manner, usually ceasing during the school holidays and at periods when the mother is unable to visit a clinic. Meanwhile no consideration is taken of the fact that the organism requires an adequate diet all through its life, and not merely at certain periods and during certain critical phases. There is reason to doubt, too, whether the provision of milk, however desirable, solves the whole complex problem of individual malnourishment; in some circumstances of dietary deficiency the consumption of extra milk may be of little use. Finally, it has been demonstrated that the provision of milk and other foodstuffs to the necessitous is a burden to local authorities in special areas of the country, and may tempt them to provide meals of no great physiological value in the effort to conserve funds; the responsibility should evidently be assumed by the nation as a whole, and not left to the whim or the resources of local authorities—as it now in fact is. Such are the views of the Committee against Malnutrition, and we agree with them. The committee suggests that there should be provided at the cost of the State, to all elementary school children without discrimination, a well-balanced, ample, and sociable midday meal, served in comfortably equipped centres open to supervision by the parents. But valuable as this scheme would be for the school children, it still leaves us with a selected group of the total population. Probably any idea of a wider extension of communal feeding would be quite alien to conditions in Britain to-day, and it seems doubtful whether the country would at present consider the large annual outlay needed to maintain even the scheme for elementary school children.

A Many-sided Problem

In concluding this necessarily brief summary of the facts and suggestions set out in the two documents we are reminded of a recommendation made in the final report of the Mixed Committee of the League of Nations on the Relation of Nutrition to Health, Agriculture, and Economic Policy (Geneva, August 14, 1937) which appears to have an important bearing on the subject under review:

> "A national nutrition policy requires the guidance of some central authority with special responsibility in order to utilize to the best advantage the teachings of science, interpret them in the light of national conditions, and suggest means for their practical application. In making this suggestion we were especially influenced by the many-sidedness of the problems of nutrition and by the necessity for co-ordinating economic and social action with new physiological teachings. . . . We are now more than ever convinced of the necessity for bringing together scientists, economists, agricultural experts, consumers' representatives, teachers, and administrators in National Nutrition Committees. . . . It is our firm conviction that through National Committees adequately representative of the various elements that go to constitute this complex problem the most useful progress can be made."

MEDICAL RESEARCH COUNCIL: TRAVELLING FELLOWSHIPS IN TUBERCULOSIS

The Medical Research Council announces that it has awarded Dorothy Temple Cross Research Fellowships to the following candidates, who intend to study problems of tuberculosis at centres in the United States during the academic year 1938–9:

NEVILLE CHRISTOPHER OSWALD, M.B., B.Chir., M.R.C.P.
JOHN FREDERIC PATERSON, M.B., M.R.C.P.
KENNETH MURRAY ALLAN PERRY, M.D., B.Chir., M.R.C.P.
JOHN OVENSTONE WESTWATER, M.D., M.R.C.P.

A MEDICO-LEGAL INSTITUTE

GOVERNMENT AID WITHHELD

The following correspondence has passed between Lord Trenchard, chairman of the Advisory Committee on the Scientific Investigation of Crime, and Sir Samuel Hoare, the Home Secretary, regarding the question of the establishment of a medico-legal institute in accordance with the recommendations made by the Committee in its report of June, 1936.[1]

Letter from Lord Trenchard to Home Secretary

"I am writing, as chairman, on behalf of the non-official members of the Advisory Committee on the Scientific Investigation of Crime—namely, Lord Atkin, Lord Dawson, Sir Bernard Spilsbury, Sir Robert Robertson, Mr. Hugh Lett, Sir Frederick Menzies, and myself—with regard to our future course of action. You will recollect that the Committee was set up by Sir John Gilmour as Home Secretary on April 9, 1935, and that we submitted an interim report on June 24, 1936, which was published on July 25. This report, therefore, is nearly two years old, and we have been seriously exercised as to what our future action should be.

"We understand from you that though you welcome the principle of the establishment of an institution for medico-legal research you find that owing to present-day world conditions it is impossible for the Government to give any financial assistance at this time towards its establishment. We feel that there would be no difficulty in the maintenance of such an institution, but that there would be great difficulty in financing the necessary capital expenditure for the purchase of a site, the erection of a building, and the equipment of such an institution without adequate Government support. We fully accept your opinion, however, that owing to the financial situation at the present time it is impossible for the Government to give that support which we consider necessary.

"We cannot conceal our disappointment at this decision, for, as we pointed out in our report, the projected institute is a matter of pressing public importance. There is hardly a capital in Europe that does not possess such an institution, and we had hoped that the time had come when this country might cease to deserve the reproach of lagging behind the greater part of the civilized world in organizing research and instruction in a subject of such great public importance.

"But faced with the impossibility of carrying this great and important work to a satisfactory conclusion without Government support for the initial expenditure, and sensible of the importance of seeing that all the work and research into this question, which is embodied in our interim report, should not be lost, we feel that the Committee should be adjourned *sine die*. It would then be possible for you to reconstitute it at any time that you consider suitable. We believe that this would be the best course to pursue, as it would be most unfortunate if the work that has been done so far were to be completely wasted.

"Of course, if any public-spirited benefactor came forward and offered to finance the capital expenditure or to give a large sum towards it, it would then be possible for you to reconstitute the Committee and carry on the work which we hope we have been of some use in furthering.

"We would remind you that when the report was published it aroused much public interest in the Press, and inquiries have since been made as to the progress of this work. Therefore we ask you to agree to the publication of this letter in the Press."

The Home Secretary's Reply

"I have received your letter of June 24, conveying the suggestion of the non-official members of the Advisory Committee on the Scientific Investigation of Crime that the Committee should be adjourned *sine die* in view of the decision of the Government that they are unable, in the existing financial situation, to provide the necessary funds for the establishment of the medico-legal institute which the Committee recommended in their report of two years ago. I have discussed this project with the members of the committee and yourself on more than one occasion, and I do not need to reiterate my personal sympathy with the object you have in view. You will appreciate, however, that the demands made upon the Exchequer in the present abnormal situation are such that the Government cannot at the moment consider a scheme which, however admirable it may be, would involve a not inconsiderable capital outlay. Unless, therefore, the necessary funds can be provided from some other source there is clearly no immediate prospect of the scheme maturing, and I can only express the gratitude of the Government to the members of the Committee for the valuable work they have done in preparing the way for the further consideration of this project when financial circumstances permit. I am in entire agreement with your view that the Committee should remain in being, and I welcome therefore your suggestion that it should be adjourned *sine die*, in order that it may be reconstituted when circumstances permit.

"I have, of course, no objection to the publication of this correspondence."

[1] *British Medical Journal*, August 1, 1936, p. 229.

MATERNITY AND CHILD WELFARE CONFERENCE

A national conference on maternity and child welfare was held at Bristol from July 5 to 7 under the presidency of Mr. R. H. BERNAYS, Parliamentary Secretary to the Ministry of Health. It had been organized on behalf of the National Council of Child Welfare and various of its constituent bodies by the National Association of Maternity and Child Welfare Centres and for the Prevention of Infant Mortality in co-operation with the maternity and child welfare group of the Society of Medical Officers of Health, and was associated with a clinical course for medical practitioners which was conducted on July 3 and 4. After the opening speech by the Lord Mayor of Bristol, Mr. Bernays delivered his presidential address on the psychology of pregnancy in conjunction with the falling birth rate, in which he said that the maternal mortality rate last year had been 3.11, the lowest for the century, but there had been no appreciable decline in the death rate of infants under four weeks old. A discussion followed in which Dr. ELEANOR JOYCE PARTRIDGE dealt with the tendency of advancing civilization to diminish procreation, partly for economic reasons but also because of the existence of what she termed "sex-starved" spinsters. Professor DREW SMYTHE had previously stressed the importance of the economic factor, but Dr. Partridge insisted on the part played by an attitude of fear of sex inbred in young girls by mistaken behaviour of their parents. In the milder cases of this predisposition education could effect much good, but in the more severe cases psychological treatment was essential. In the evening of the first day there was a reception by the chairman and members of the Bristol Health Committee at the Clifton Zoological Gardens.

Physical Fitness in Children

Mr. R. C. ELMSLIE, F.R.C.S., opened a discussion on physical fitness in young children by reading a paper on postural defects in this class of the community. He first defined a "defective posture" as one which was not necessitated by or adapted to what was being done at the moment, and gave illustrative examples. A defective posture further interfered with normal function, but to be considered a defect it must be habitual. Temporarily relaxed attitudes were not always harmful. Clothing must not be too tight, particularly across the chest and round the shoulder-joints. Shoes for children must not be too stiff to bend under their weight. Postural defects should

be treated by ensuring full mobility and by simple exercises for this and for control of balance and position, and by other simple mechanical methods recommended by the medical practitioner. Mr. Elmslie added that during his lifetime he had seen a great diminution in the number and severity of postural defects, resulting from improvement in hygiene, in clothing, and in physical education. In young children minor orthopaedic defects were most likely to be encountered immediately after birth, when the child began to sit and stand, and with the starting of school attendance. Mr. JOHN BASTOW, F.R.C.S., dealt in some detail with the treatment of minor orthopaedic defects.

Co-operation between Organized Bodies

This session of the conference was opened by Dr. F. J. POYNTON, who spoke on the need for closer co-operation between the school medical and maternity and child welfare services and the need for increased provision of convalescent residential accommodation for children under school age. He was followed by Dr. A. S. M. MACGREGOR, medical officer of health for Glasgow, who insisted that the child welfare service and the school medical service could and should function most harmoniously under public health administration, the two services having now been amalgamated in most parts of Scotland, and there being from the point of view of the Department of Health for Scotland "no real break" in the child's development medically between the ages of 1 and 14. The two services, further, came into close practical contact in the joint use of remedial clinics, medical inspection of the pre-school child, and the nursery school. Dr. Macgregor gave details of what was being done in Glasgow, mentioning the training course for teachers, and explaining why he thought that on practical grounds it would be better to associate the nursery school with the child welfare service rather than with the school medical service. He was followed by Professor R. H. PARRY, medical officer of health for Bristol, who said that co-ordination of the two services was far from being general in the country generally at present. Details were given of the methods of obtaining closer co-operation in Bristol and the creation of the first health centre in the Shirehampton (Portway) district of the city in 1935.

Dr. WILFRED PEARSON sponsored the claim of the pre-school child to further consideration by the public and the provision of better convalescence facilities for children of that age in conjunction with better supervision in the home, and adequate medical attention when required. Periodic home visiting should be systematic, while day nurseries and nursery schools should be multiplied. Dr. R. COVE-SMITH asked for the provision of emergency homes for infants and toddlers in cases of parental illness or domestic crisis. He paid a warm tribute to the supplying of such day nurseries by the National Society, and he enumerated the types of children which might be expected to benefit from an extension of such facilities. Care must be taken to avoid institutionalization, and it was necessary to provide a background which would give a sense of security and develop self-reliance and initiative rather than dependence. If temporary shelters were going to be provided by the Government as part of the Air Raids Precaution scheme, some might be used from the start as emergency holiday homes until the more urgent need arose. Under careful supervision, the supply of adequate ventilation, balancing of diet, and the supply of suitable clothing, there would be an improved environment with a minimal risk of cross-infection. The most satisfactory size for such homes would appear to be a nursery school of about fifty children, presided over by a matron with nursing and nursery school qualifications, and assisted by a nursery school teacher, four staff nurses, and about fifteen probationers.

Parental Considerations

Opening a discussion on "the parents of the future," Miss MARY MACAULAY considered a wide range of possible questions which were posed by children and adolescents and discussed how they should be dealt with. She thought that far too little was being done to use the different ages of children to prepare them for their own eventual maturity and possible parenthood. This paper led up naturally to the subject of sex teaching in girls' clubs, and Miss VIOLET SWAISLAND indicated various practical points which arose, while Dr. G. DE M. RUDOLF, in a paper on sex teaching in boys' clubs, said that parents should be made to realize that knowledge of sex did not imply licence, but rather that the sexual and acquisitive instincts could be turned to other than the direct uses of them. Children should be taught that pre-marital intimacy caused psychological harm and tended to lead to unhappy marriages, while restraint before marriage led to more respect and happiness after the wedding day. Dr. EDWARD GRIFFITH read a paper on individual preparation for marriage.

Reports of Societies

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION

Annual Meeting in Yorkshire

The ninety-seventh annual meeting of the Royal Medico-Psychological Association was held at Ilkley from July 6 to 8, under the presidency of Dr. JOHN R. GILMOUR, medical superintendent of Scalebor Park institution (West Riding County Council). The meeting was attended by several psychiatrists from abroad who brought greetings from their respective associations: Dr. R. Gjessing of Oslo, Dr. Noël Péron of Paris, Dr. M. Sakel, formerly of Vienna and now of New York, and Dr. J. H. Pameijer of The Hague.

The Private Patient and Some Changes

In his presidential address Dr. GILMOUR discussed some of the changes which had taken place, especially with regard to private patients, during his more than thirty years' experience of Scalebor Park—the only local authority hospital solely for private patients, he believed, in the country. The most noteworthy change, he said, had been in the incidence of general paralysis. For many years this incidence was high, now it was very low. Alcoholism had been almost negligible among his patients. Formerly it was accepted as inevitable that tuberculosis would break out in any mental hospital, but it was now many years since a case had arisen in a patient at Scalebor or a member of the staff. Influenza was still a potent cause of mental trouble. Many of the cases were of what he called the "August holiday" type; the initial attack of influenza took place in the winter or early spring, followed by listlessness, inability to concentrate, headaches, and increasing depression, and after the August holiday had failed a number of patients sought the refuge of the institution. A social change which lowered the numbers who could be discharged as relieved was the diminishing family, which meant that often there was no disengaged relative to look after the patient.

The greatest social change, Dr. Gilmour continued, was the vastly increased public interest in psychological matters since the war, accompanied by a decline in the observance of all forms of religion. Thirty years ago the reply to the question as to a patient's religion was given unhesitatingly and without apology; now the question had to be directed to his reactions to the cinema or recreation centre.

"The younger generation are no longer looking outwards for their salvation, but are driven deep into their inmost consciousness for a solution of their problems, and, finding there what does not give them peace, they fly to the psychologist. . . . Man has turned to his own subjective processes, and any maladaptation of these leads to a feeling of illness, and that illness, being psychic, must be treated psychologically."

Physio-pathology of Schizophrenia

Two of the three scientific sessions were devoted to schizophrenia, its pathology and treatment, and seven papers were contributed on convulsive shock therapy. A cinematograph film illustrating insulin and cardiazol treatments was shown by Dr. G. W. B. JAMES. It showed a normal morning of insulin treatment in one patient from injection to interruption, the various manifestations of hypoglycaemia, and (a colour film, partly in slow motion) the epileptiform convulsions induced by cardiazol. Dr. J. H. QUASTEL and Dr. W. T. WALES read a paper on faulty detoxication in schizophrenia. They had used the hippuric acid excretion test in sixty-seven cases of mental disorder, eighteen of which were classed as catatonics. All the catatonic patients studied, without exception, showed a diminished ability to excrete hippuric acid at a normal rate. The authors inferred that a metabolic disturbance of the liver affecting benzoic acid detoxication may be a characteristic feature of catatonic patients. Dr. R. GJESSING of Oslo gave the results of a study of thirty-three patients, including twenty-four periodic catatonics. The investigation consisted of kinetic registration of a number of representative physiological functions daily or several times a week over a period of four to six months. During the stupor-free and non-excited phases there was a gradual accumulation of nitrogen in the body which reached the threshold characteristic for each case. When this level had been reached there was a sudden change in the vegetative tone, the excess nitrogen was excreted, and the patient entered the active phase of stupor or excitement as the case might be.

Professor F. L. GOLLA, speaking on this last work, said that his feeling was that here was offered a definite treatment based on somatic pathology for a certain—possibly very limited—class of patient. At the same time he thought it would be the most unhappy thing if it were supposed that in order to improve the mental state of the patient it was only necessary to use the proper hormone for an endocrine gland which was functioning improperly. Dr. P. K. MCCOWAN also uttered some cautions, suggesting that Dr. Gjessing's work might not have the pathological significance he was inclined to attach to it, and that there was a physiological explanation of some at least of the results he had been able to obtain.

Convulsion Therapy

The first of several papers on shock therapy was by Dr. MANFRED SAKEL, who described what he called his "pharmacological shock treatment." The overdosage of insulin manifested itself in two main groups: first, in the form of the so-called "wet shock" with coma and profuse perspiration, and, secondly, in the form of an epileptic seizure, frequently without perspiration—the so-called "dry shock." As these two main groups could not be directed by insulin alone, he initiated the dry shock—if it did not occur spontaneously—by injecting cardiazol in the second or third hour after insulin, and thus provoking convulsions. Dr. Sakel presented a statistical record of 1,500 treated cases from New York State Medical Service. The number of recoveries was given as 192; 280 were said to be much improved, and 357 improved. The ratio of improvement was definitely less with the duration of the disease; nevertheless, in cases of six years' or greater duration there had been recoveries and improvements. Dr. Sakel's statistics were criticized by some members because they had been compiled by a professional statistician, not a medical man. One speaker, Dr. H. GILLIES, declared that professionally compiled statistics were a little worse than useless. From his own small series of insulin-treated cases it required very little juggling to prove (1) that insulin was a complete cure for schizophrenia, and (2) that it was of no use at all. An honest impression was worth more than reams of statistics, and his impression was that insulin and cardiazol did in some way aid in the production of remissions.

Dr. L. C. COOK discussed the range of mental reaction states influenced by cardiazol convulsions. Convulsion treatment, he said, did not pick out particular mental diseases or individual symptoms. Its effects depended less upon the type of morbid reaction than upon its duration and depth and upon the degree of dissociation of personality. Dr. L. W. RUSSELL pointed out that the combined insulin-cardiazol therapy enabled the fits to be controlled. "The too placid patient gets his fit, and the patient who is prone to fits has luminal to stop them, and has the fits as they are indicated by the use of cardiazol." In the "raw" cardiazol treatment the failure of the injection to produce a fit was often followed by agitation and nervous upset, but with the combined therapy the failed fit was less common because the patient was more prone to the fit, and also less upsetting because it was produced in a state which was so near to unconsciousness that it was completely forgotten. Lately he had thought that subconvulsive doses of cardiazol were of great benefit. They seemed to have a better effect in the stuporous cases than the full fit dose. Patients often had a pathetic terror of the cardiazol injection, but insulin predisposed to the fit and also gave a complete amnesia, besides having its own therapeutic effect.

Psychological Aspects of Shock Treatment

A study of the behaviour of patients under insulin was presented by Dr. EDWARD LARKIN. Patients who recovered with insight, he said, were able to describe their feelings whilst they had been in the schizophrenic state. They agreed that the predominant feature was lack of interest in persons and things. He gave a description of a method of quickening external interest during treatment. With the treatment properly carried out the patient himself began to make efforts to reach out to reality and gradually to get away from the childish plane. Dr. Larkin added that observation of the behaviour of the nurses administering this technique indicated a possible neuropathology of schizophrenia which, if true, established part of the rationale of insulin and cardiazol treatments.

Dr. A. DICK and Dr. W. MCADAM presented observations on four cases of cardiac complication in cardiazol treatment—auricular fibrillation in three, and the onset of heart-block immediately following a convulsion in another. Dr. L. A. FINIEFS discussed the dangers and emergencies of insulin therapy; these included premature incidence of coma, circulatory and respiratory complications, convulsions, delayed return to consciousness, and toxic reactions and after-effects.

The use of a new convulsant drug, triazol 156, in the treatment of schizophrenic and other mental states was described by Dr. A. WALK and Dr. W. MAYER-GROSS. Its advantages were given as smaller dosage, lessened cost, less unpleasantness to the patient, and the possibility of intramuscular administration. Certain variations of the treatment were now being tried out, including the induction of prolonged "twilight" states without convulsions, the induction of multiple convulsions, and the administration of convulsant doses with inhibition of the fit by amyl nitrite.

Precautions and Qualifications

Dr. ISABEL WILSON of the Board of Control said that a point which had emerged from the discussion was the value of standardization of technique. It was important that those who were going to work with insulin or

cardiazol or any of these drugs should know the orthodox methods before they began. Another point of great importance to bear in mind was that there was hardly a worker in this field who did not also rely on psychological methods of some kind. It was out of the question to treat these patients with a mechanical substance and expect that to work the whole miracle. As for the dangers of the treatment, everyone was agreed that the more experienced the worker the less was the danger. Sir LAURENCE BROCK, chairman of the Board of Control, mentioned that the Board was shortly publishing a report by Dr. Isabel Wilson and Dr. Rees Thomas on treatment with cardiazol as observed by them during a recent visit, made at the request of the Board, to Budapest, Vienna, and Frankfort.

Dr. H. PULLAR STRECKER said that it would be unfortunate if the idea became prevalent that mental disease could be cured by a few convulsions or comas. This occasionally did occur, but certainly not as a general rule. The very advantages of cardiazol treatment constituted a danger—namely, that the public or even the profession might come to believe that any case, whatever its type or duration, could be cured. While admiring Dr. James's cinematograph film, he thought those who had seen the actual treatment with insulin and cardiazol would agree that it was not quite so drastic as the film made it appear. Dr. J. H. PAMEIJER, Inspector of Mental Hospitals, Holland, said that in the mental clinics of the four universities in his country about 700 patients had been treated by insulin and 1,200 by cardiazol. Individual cases did completely recover, and in others there was surprising improvement. But among the 700 cases subjected to insulin treatment there had been six deaths, and four deaths among the 1,200 subjected to cardiazol. He had also known fifteen cases of fractures occurring during cardiazol treatment. Dr. A. A. W. PETRIE described the apprehensions of the patients subjected to cardiazol—a real point against the method. Some of the patients had described it to him as "worse than death."

Genetical Problems in Mental Deficiency

The final session of the meeting was devoted to the subject of mental deficiency, and two papers were contributed from the Royal Eastern Counties Institution, Colchester. Dr. L. S. PENROSE, in a paper on genetic problems, said that rare dominant Mendelian characters might be the chief causes of mental defect in cases of Huntington's chorea, epiloia, neurofibromatosis, and some types of oxycephaly. Dominance in man was very often incomplete, however, and the expression of dominant genetic factors was variable. The genetic factors responsible for some relatively mild types of mental defect appeared to be incompletely dominant. In some families the mating of two cases of mild defect produced offspring with severe defect. Again, in a number of types of congenital defect, though there might be a genetic background, environment was much more significant than heredity. Congenital syphilis, encephalitis, and cerebral trauma, from the medical point of view, were simple environmental causes of mental impairment. When the origin had to be sought for in the prenatal period the effects of environment and heredity were less easy to separate. The maternal age at the birth of the child was aetiologically important in mongolism and also, but to a lesser degree, in anencephaly, hydrocephaly, and spina bifida.

Dr. T. A. MUNRO presented a paper on consanguinity and mental disorder. A survey of a large group of mental hospital patients showed that the incidence of consanguineous parentage was higher among psychotic patients than among persons suffering from general bodily diseases. A comparison of 152 psychotic patients of consanguineous parentage with a similar group of unrelated parentage showed a higher incidence of schizophrenia in the consanguineous group. Differences also appeared amongst the relatives of the patients in the two groups, those in the consanguineous group showing a higher incidence of neurosis and psychopathic personality. Dr. Munro exhibited the following table showing the parental consanguinity rate among patients in the Cardiff Mental Hospital and in the Cardiff Royal Infirmary respectively:

	No. of Patients	Percentage Parents Consanguineous	Percentage Parents First Cousins
Mental Hospital :			
Present patients	466	2.58	1.72
Former patients	1,226	2.04	—
Royal Infirmary	1,723	0.81	0.46

The nearer in blood to the patient the greater the chance of mental disorder. Among patients who had blood-related parents he had found several instances of strange and rather atypical psychoses.

Dr. J. A. FRAZER ROBERTS drew attention to the people who exceeded the intelligence quotient average by the same amount as idiots and imbeciles foreshortened it—persons with intelligence quotients of 150 or thereabouts on the Binet scale as compared with the 50 of the feeble-minded. He was not sure whether the child with an extremely high intelligence quotient—a colleague had come upon a ten-year boy whose quotient was just over 170—was not as abnormal socially as the imbecile. Dr. E. O. LEWIS said that it was a matter of pride that in this country there were two centres at which this kind of research was organized and carried on in a systematic way—namely, the Royal Eastern Counties Institution and Stoke Park Colony. The younger generation of investigators like Dr. Penrose worked on meagre data as compared with the long genetical tables of Karl Pearson and Goddard, but the meagreness of the data was a merit because it showed that they were far more critical of their data than the older workers.

At the annual dinner of the Association, Sir JAMES BAILLIE, Vice-Chancellor of Leeds University, in proposing the principal toast, urged the need for more training in psychology for medical students. He believed that 90 per cent. of the students passing into the profession had had no proper or systematic training in general psychology at all. It was not enough to study the abnormal. A training in normal psychology was as necessary as in normal physiology. He looked forward to the time—not distant, he hoped, in the case of Leeds—when every hospital attached to a medical school would have among its posts one dealing with mental aberration in its earliest stages.

R. Laporte and R. Grimal (*C. R. Soc. Biol.*, Paris, 1938, **128**, 42) have found difficulty in cultivating tubercle bacilli from material which has taken some days to reach the laboratory and which has arrived in a state of putrefaction. With such material the ordinary sulphuric acid technique cannot be relied upon for the destruction of contaminating organisms. Experiments have shown that a satisfactory way of preventing bacterial growth in post-mortem and other material is to place the tissue in 5 to 10 times its volume of a 10 per cent. solution of sodium carbonate. This solution has some destructive action on the tubercle bacillus, but not very much more than Ringer-Locke solution. Material that has been soaked in it for some time becomes soft, and can be ground up very readily with sand in a mortar. Once a homogeneous suspension has been obtained, the carbonate is neutralized with hydrochloric acid, using litmus as an indicator. The suspension can then be diluted with distilled water and inoculated directly on to tubes of egg medium. Only if the tissue is badly contaminated before being placed in the carbonate solution is it necessary to treat it with sulphuric acid before cultivation.

Local News

ENGLAND AND WALES

An Association of Special Hospitals

A conference of delegates from sixty-three London special hospitals was held at the Royal Westminster Ophthalmic Hospital on July 5 for the purpose of founding an Association of Special Hospitals. Lord Mersey, chairman of the Royal Westminster Ophthalmic Hospital, presided. Mr. J. P. Wetenhall, house-governor of the West End Hospital for Nervous Diseases, proposed that the Association of Special Hospitals be founded. He said that he had discussed with the vice-chairman of his own hospital fourteen years ago the possibility of forming such an association, but the matter was not then carried further. The publication of the Sankey Report last year had brought the matter to the front again. After a preliminary conference held at Moorfields Eye Hospital last October an *ad hoc* committee was formed, and as a result of its deliberations the present meeting was being held. Sir Kenneth Wigram, chairman of the Cancer Hospital, seconded the resolution, which was carried unanimously. A constitution, proposed by Mr. Wentworth Stanley and seconded by Sir Mortimer Margesson, was carried, and the association elected the following officers: president, Sir Kenneth Wigram; honorary treasurer, the Earl of Dudley (chairman of the Brompton Hospital); honorary chairman, Mr. Wentworth Stanley (vice-chairman of the City of London Maternity Hospital); and honorary secretary, Mr. J. P. Wetenhall. A council was elected consisting of two representatives of each of eight classified groups of special hospitals—women's, children's, ophthalmic, nervous diseases, ear, nose, and throat, chest, and heart—with representatives from unclassified special hospitals, including genito-urinary, cancer, and "long-stay" hospitals.

West London Medico-chirurgical Society

The president, Mr. D. G. Rice Oxley, took the chair at this society's annual dinner held on July 6 at the Trocadero Restaurant. Viscount Dawson of Penn presented the society's Triennial Medal to Professor E. C. Dodds, who, he said, brought to his searchings after knowledge a Promethean fire and an untiring energy. His work on the purification of insulin had reduced its price considerably and brought about a great benefit to the community. His greatest work, however, was on the sex hormones. That very year he had produced a synthetic male hormone which outstripped anything Nature could produce. Professor Dodds, in thanking Lord Dawson and the Society, pleaded with his clinical colleagues to give research workers the greatest possible freedom. The generosity of the staff of the Middlesex Hospital in allowing him to wander into any branch of chemistry he chose had made possible the breaking of one of the strongest Continental patent rings in this particular group of substances. Proposing the health of the society, Lord Macmillan said that, like all good things, it had grown up spontaneously and was the ideal club for a profession like that of medicine. They were entering on a romantic age of medicine, full of the stirring of adventure. The president, in reply, sketched the activities of the society, and Mr. Alex Roche proposed the health of the guests, who included Dr. Robert Hutchison, Sir Farquhar Buzzard, Sir William Willcox, and the presidents of many medical societies. Replies were made by Dr. Robert Hutchison, Sir Henry Gauvain, and Mr. J. E. H. Roberts. Dr. Hutchison claimed the West London medal for heroism in the discharge of medical duties, on the ground of the large number of banquets he had to face as President of the Royal College of Physicians. He relied on the support of Lord Macmillan, that veteran of a thousand stricken banqueting-halls.

Treloar Cripples' Hospital, Alton

On July 6 over 150 members of the medical profession of Hampshire accepted the invitation of the trustees of the Lord Mayor Treloar Cripples' Hospital, Alton, to meet Lord Horder and to witness a number of special demonstrations by the resident and honorary medical staff. Lord Horder, in his address, contrasted the treatment of the crippled child thirty years ago when the hospital was founded with the treatment now given at the Treloar Hospital. The advance made, he said, had been largely due to the work of Sir Henry Gauvain and his staff. They had done a great deal of the field work in that sphere of medicine, and had settled the principles on which the treatment of the crippled child was founded. The scope of the work had been widened until it embraced any and every crippling condition. He had watched it grow, and he warmly congratulated Sir Henry Gauvain on the success he had achieved and the substantial contribution he had made to medical science. During the afternoon interesting cases were demonstrated by Mr. H. A. T. Fairbank, Sir Henry Gauvain, Professor Hey Groves, Dr. C. E. M. Jones, Mr. T. Pomfret Kilner, Mr. H. H. Langston, Dr. R. L. Vollum, and Sir William Willcox. The hospital, the rebuilding of which has just been completed, and the New Treatment Centre, which embodies all the most up-to-date modern appliances and improvements, provided a very interesting afternoon for the visitors.

IRELAND

Medical Research Council of Ireland

The Medical Research Council of Ireland has made the following awards: Dr. Patrick J. H. Clarke: Whole-time grant for six months' training in juvenile rheumatism, to be taken at various centres in London, to be followed by a six-months survey of the disease as it occurs in Dublin and district. Dr. E. S. Duthie: Grant-in-aid for one year to enable him to employ technical assistance in connexion with an investigation of (*a*) chemotaxis in leucocytes and (*b*) enzyme content of lymphocytes, the work to be carried out in the Sir William Dunn School of Pathology, University of Oxford. Dr. D. M. Mitchell: Grant-in-aid for expenses in connexion with an investigation of the effect of deficient diets upon the central nervous system and peripheral nerves, the work to be carried out in the School of Pathology, Trinity College, Dublin. Professor H. F. Moore: Grant-in-aid for anatomical and pathological technical assistance in connexion with an investigation of bundle branch block, the work to be carried out in the Anatomy Department, University College, Dublin, by Dr. E. Keenan, and in the Mater Misericordiae Hospital, Dublin, by Dr. W. R. O'Farrell.

Royal Maternity Hospital, Belfast

The new wing to the Royal Maternity Hospital, Belfast, which has been named Johnstone House after Sir Robert Johnstone, was opened on June 28 by Lady Craigavon. It contains twelve beds in single rooms and one ward with three single-bed cubicles; two theatres, with a sterilizing room; a separate nursery with an annexe for incubators; and a milk room, besides other service rooms. The private wards are intended for patients who are able to meet the full cost of maintenance and medical treatment, and the cubicles for patients of limited means, the charge for the single room being higher than that for a cubicle. Sir Robert Johnstone, who attended the ceremony, spoke of the importance of safe maternity. It was the duty of the

public and of the Government, he said, to see that mothers were safe while giving birth to their children and that they were restored safe to their families afterwards. It was not expected that Johnstone House, although a paying block, would bring in any enormous income. Subscribers would have to continue their loyal support of the institution.

SCOTLAND

St. Andrew's Ambulance Association

At the recent annual meeting in Glasgow of St. Andrew's Ambulance Association it was stated that during the past year 48,943 calls had been made for the service of ambulance wagons, and that the total number of patients conveyed since the formation of the association was 818,372. In Glasgow alone during the year the ambulance wagons had turned out on an average fifty-seven times daily. The aeroplane ambulance service instituted in 1933 continued to grow, and seventy-four patients had been carried by this means during the past year. The association had now eighty-nine motor ambulance wagons, of which seventeen were in Glasgow and the remainder throughout Scotland.

Cremation in Scotland

At a conference on June 29 of the National Association of Cemetery and Crematorium Superintendents and the Federation of Cremation Authorities in Edinburgh, Dr. W. G. Clark, medical officer of health for Edinburgh, speaking on cremation from the standpoint of the public health official, said that legislation threw upon the medical profession the responsibility of ensuring that in the disposal of the dead there should not be danger to other persons. A badly situated cemetery might be a danger to the health of the nation, although a modern cemetery properly constituted was not so. As a public health official, however, he believed that cremation was the hygienic method for disposal of the dead. Dr. Douglas J. A. Kerr, medical referee to the Edinburgh Corporation, read a paper on the Cremation Act and Regulations, and said that at the present time control of cremation in Scotland was exercised by the Secretary of State through the Department of Health. The ultimate aim should be to make cremation as convenient and economical as earth burial; this could only be done if crematoria were at hand in every district. With regard to the medical certificate, he thought that a change was necessary. The first medical certificate was, of course, essential, but the wording required to be adjusted. The certificate began: "Having attended the deceased before death," and this was construed by some medical men to mean weeks, months, or even years. Further, the provision for cremation during epidemics should be extended to cover deaths in air raids.

Royal Blind Asylum

At the annual meeting of the Edinburgh Royal Blind Asylum and School on July 6 the question was raised of unemployed persons who received training at community centres in the city in work usually done by blind persons and, by undercutting, restricted the markets for the goods produced by blind workers. It was considered by one member of the board that the problem of blind workers could only be solved if institutions providing for them were taken over by the State. The Royal Blind Asylum could not even afford to train all those who applied; some persons had been waiting six years to begin training. Professor James Drever, of the chair of psychology in Edinburgh University, said that the compulsory education of blind children dated in Scotland from 1890, but until the Act of 1936 came into force the education provided was elementary and the period of compulsory education extended from 5 to 16 years. Many children, however, who to-day would be recognized as educationally blind had been denied a satisfactory education because school boards did not send them to a blind school unless they were obviously blind in the popular meaning of the term. The 1936 Act now required the provision of educational facilities from 3 to 18 years. During the past twenty years blindness had been greatly reduced because the public health authorities had successfully tackled blindness of the newly born; to-day only one child was blinded from this cause as compared with ten twenty years ago. About two-thirds of all blind children at the present time were blind from causes outside medical aid, and as a result they must make provision in their school for between 120 and 130 blind children.

Princess Margaret Rose Hospital

A new Nuffield Ward at the Princess Margaret Rose Hospital for Crippled Children, Edinburgh, named in acknowledgment of a donation of £8,000 from Lord Nuffield towards the cost of the extension of the hospital, was opened on July 4 by Mr. John Colville, Secretary of State for Scotland. Mr. Colville said that since Sir Robert Jones became a pioneer of modern orthopaedic surgery in England many thousands of children had been made whole and straight, while many others had had their handicap in life reduced. Orthopaedic surgery was not a simple process, and treatment was prolonged sometimes to years; it required, therefore, many kinds of skill and infinite patience. There were no reliable figures as yet on which to estimate the number of persons in the country, children and adults, who were crippled in one way or another, but these would be available when the survey of cripples in Scotland, which was being carried out by the Central Council for the Care of Cripples, was completed. The Earl of Home, president of the hospital, presided at the annual general meeting of subscribers, and Harriet Lady Findlay, in submitting the annual report, said that the work of this hospital was growing every week. Co-operation between the hospital and the local authorities in the south-eastern area of Scotland was increasing, and it was hoped soon to have the full number of clinics required for after-care of patients treated in the hospital. The finances of the institution were satisfactory, but further funds were needed to provide an adequate endowment and for additional buildings. Mr. W. A. Cochrane said that during the past year there had been 232 admissions, and the hospital through outside clinics was now caring for the large total of nearly 1,000 cases. Patients were now being admitted in the early stages, so that treatment could often be carried out in clinics; for one child who needed to be admitted to hospital ten could be dealt with outside as out-patients with great saving in cost and in suffering.

Decreased Mortality in Fife

Dr. G. Pratt Yule, who is retiring after twenty-six years as medical officer of health in Fife, in a valedictory address recently to the County Council Public Health Committee, said that one of the most important features in the county was the fall in the infantile mortality rate. In the period 1892–1906 the rate was 108 per 1,000 births, but during the following fifteen years the rate fell to 97, and after 1922 there was a further fall to 79. Health visitors had had much to do with this result by teaching mothers how children should be fed and clothed; Fife had been one of the first counties in Scotland to introduce health visitors. When he qualified scarlet fever was a virulent disease, and during the period 1912–21 the yearly scarlet fever death rate was 79 per 1,000, but between 1927 and 1936 it dropped to 65. In the former period there were twenty-three deaths from typhoid fever, but during the last six years there had been only six deaths from this disease. Similarly the deaths from measles had fallen from 161 to 64, while those from whooping-cough had fallen from 260 to 113.

Correspondence

Medical Relief in China

SIR,—In a recent issue of the *British Medical Journal* you very kindly inserted an appeal for help to keep the British hospitals in China supplied with necessary drugs and instruments during this time of stress and strain due to the Sino-Japanese conflict. The appeal, which is a special section of the Lord Mayor's Fund for the Relief of Distress in China, bore the signatures of a number of those whose names are well known in the medical world, and a copy was sent by post to members of the profession in England, Wales, Scotland, and Ireland—approximately 40,000 in number. I am glad to say that the list is too long for me to ask you to publish the names and amounts of those who have so far sent in their contributions.

Up to to-day's date 871 subscriptions have been received amounting to £1,540 7s. 10d., and although each one has been acknowledged with an official receipt, I wish through your columns to thank those who have responded and at the same time to remind others who have not yet sent in their donations that for this special purpose £6,000 is needed, and we do hope that this amount may be forthcoming.

If there is one thing more than another which stands out in this welter of human suffering in China it is the way in which complete co-operation has been achieved in the matter of medical relief. No barrier of race or religion has been allowed to stand in the way, and the business man, the consular official, and the missionaries of all denominations have co-operated in trying to bring relief to those in distress. Cheques and postal orders should be sent to me at 121, Westbourne Terrace, London, W.2.—I am, etc.,

H. GORDON THOMPSON,
Executive Secretary and Treasurer, Lord Mayor's Fund.

July 11.

Anti-venereal Measures

SIR,—Dr. Robert Forgan (*Journal*, June 25, p. 1389) seems to think he can easily make hay of the Ministry of Health Report on Anti-venereal Measures in Scandinavia by quoting a few ill-digested figures. He speaks of the decline of syphilis in England and Wales from 1922 to 1936 as being only from 25,000 to 18,000, as compared with that in Denmark from 2,400 to a third of that number. This latter he calls a drop of 300 per cent.—a new method of reckoning! I prefer the ordinary method, by which a reduction of 100 per cent. means a drop to zero. Thus a drop from 2,400 to 800 is a reduction of 66 per cent. But the figures of the two countries are not comparable, since the English numbers (25,000 and 18,000) are cases of syphilis *at all stages*. (See pp. 237 and 238 of the Ministry of Health Report for 1936.) What we need for comparison is the number of *fresh* cases of syphilis for each year; and this we have (in the same report) for the years 1931 to 1936. Now these figures show a decline in fresh cases of syphilis from 9,104 in 1931 to 5,675 in 1936—a reduction of no less than 38 per cent. in six years. From the earlier figures given in the 1936 report it is certain that a further considerable reduction of fresh cases had gone on during the decade 1922 to 1931, so that the total reduction of fresh cases between 1922 and 1936 cannot be less than 50 per cent. This reduction, indeed, is not so great as that claimed for Denmark and Sweden (about 68 and 72 per cent. respectively), but the difference is not startling. Incidentally, Dr. Lomholt questions the reliability of the Danish figures. If my contention is right Dr. Forgan is not a little wrong.

In any case, at the present time, Holland, which has not adopted compulsory measures, had according to this report a syphilitic incidence of 1.06 per 10,000 population in the year 1935, which is midway between the corresponding figures for Denmark and for Sweden. But the Ministry of Health's Report is not concerned only with statistics, the pitfalls of which are known to every statistician. The conditions of each country, external and internal, the character of the peoples, the density of their population, the nature of their industries, form a background which must be taken into consideration before applying to one country a system which may be suitable for another. The Commissioners have candidly stated that in Denmark and Sweden the compulsory system works without much hardship on, or concealment by, patients, this being due to the social outlook of the people and the influence of the medical profession. In Holland, where the population density is 667 to the square mile (as compared with Denmark, 224, and Sweden, 39.5), we should expect the incidence of syphilis to be higher than in either Denmark or Sweden, and in Great Britain at least as high as in Holland. The figures given per 10,000 population are: Denmark, 2.1 (minimum 1.6); Sweden, 0.67; Norway, 1.5; Holland, 1.06; England and Wales, 1.7; and Scotland, 1.8.

I know that in this country there are many laymen, and clinicians too, who, in justifiable anxiety to get rid of venereal diseases, wish to fly to compulsory methods. The wisdom of such a course must be determined not by statistics alone but by reflection on the character and outlook of the populace. I for one am convinced that here the effect of compulsory notification would, on the whole, be detrimental. From the report it is clear that the Scandinavian administrators say that legal compulsion is seldom employed, though they think it is useful to hold in reserve. In spite of it, however, gonorrhoea, which is equally under compulsory laws, is not markedly decreasing in Scandinavian countries any more than in Great Britain. —I am, etc.,

Dumbarton, July 6. DOUGLAS WHITE, M.D.

Ischio-pubic Osteochondritis

SIR,—Being convinced that enlargement of the ischio-pubic junction, with or without some definite irregularity in density of the bone, was not nearly as rare as Mr. G. D. F. McFadden in his report of a case published in the *Journal* of June 18 (p. 1309) suggests, a limited search has been made in my personal records with results that seem to be of some interest.

Batches of consecutive films showing the pelvis in childhood were examined for this "lesion." In 200 cases suffering from various affections of the hip twenty-five showed enlargement of the junction in one or more of their films. To give a few details: The first 130 cases of congenital dislocation of the hip provided eleven with the lesion on one or both sides of the pelvis. Both uni- and bi-lateral lesions occurred with either uni- or bi-lateral dislocations. There seemed to be no connexion between the appearance of the lesion and the manipulative reduction of the dislocation, since in most the ossification of the rami at the time of the reduction was but little advanced, and the lesion was only found from two to eight years later. In one case the lesion was present before the reduction.

Of thirty-six consecutive cases of pseudo-coxalgia, ten showed the ischio-pubic lesion on one or both sides. In three of these the lesion was unilateral and on the opposite side to the changes in the femoral head. In the remaining seven cases the lesion was bilateral; in only one of these were the changes in the femoral head also bilateral. In thirty-odd cases of various types, including tuberculous and other infections of the hip, four were found showing the lesion: in two it was unilateral, and in two bilateral. Two of these four cases suffered from tuberculous disease of the hip-joint. In none of these twenty-five cases were symptoms noted directing attention to the ischio-pubic junction. Were such symptoms present at any time they were either overlooked or misinterpreted. In most of the cases the abnormality as seen in the films consisted only of enlargement of the junction; in a few there was irregularity in density of the bone in addition. In the majority of the cases films taken at a later date were available for examination; in each such case the rami had fused and presented a normal appearance.

These cases, it seems to me, suggest that enlargement of the ischio-pubic junction, with or without some irregularity in density, may occur as a developmental peculiarity devoid of any clinical significance. Any inference which might be drawn from the higher percentage of lesions found in the pseudo-coxalgia group—a small group from which to draw conclusions—seems to be negatived by the fact that the numbers found in the other groups were far from being negligible.

As to the cases with symptoms which appear to be due to the changes at the ischio-pubic junction, it was suggested many years ago by my colleague Mr. George Waugh, when showing me films of a case with definite symptoms, that the pathology was nothing more than "neglected trauma." My small experience of similar cases—the notes of three such are before me as I write—strongly supports this suggestion. Complete rest for no more than a few weeks permanently relieves the patient of all symptoms; films taken later show complete disappearance of the lesion.

There remains the question whether pathological changes worthy of the title "osteochondritis" ever occur at the ischio-pubic junction. Personally I doubt it, if we take as our type pseudo-coxalgia, in which, be it remembered, the changes progress markedly for several months before healing sets in and ultimately restores a normal density if not a normal shape to the femoral head. Though I cannot agree with all the opinions expressed in his letter, I strongly support Mr. G. Edgar Church in his protest against the indiscriminate use of the term "osteochondritis" for every case in which irregularity in density and shape of an epiphysis, or other fragment of bone forming in cartilage, is not readily attributable to a definite cause. In my opinion a large proportion of the reported cases have little or nothing in common with that interesting condition of the hip which I have suggested should be taken as the type, and which passes under so many names, among which "pseudo-coxalgia" has the advantage of committing one to no pathology.—I am, etc.,

London, W.1, June 11. H. A. T. FAIRBANK.

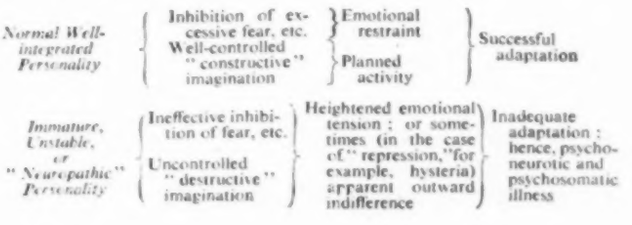
Rising Incidence of Psychosomatic Illness

SIR,—Dr. James L. Halliday in his interesting article (*Journal*, July 2, p. 11) appears puzzled by the rising incidence of disorders of psychological origin. I submit that much of this increase is apparent rather than real. When I was physician to the Birmingham Nerve Hospital before the war I could not help being impressed by the large number of out-patients attending there who had been turned away from other hospitals because no organic basis for their complaints could be discovered. In those days, which seem so long ago, the psychological factor in disease was pooh-poohed, and such patients drifted about until they found a doctor who realized that dyspepsia and other disabilities could be caused by ideas as readily as by physical or chemical irritants. Disturbances arising from the physical concomitants of emotions were but little understood, and a sufferer from them was disdained as a *malade imaginaire* and a nuisance. This had a deterring effect. Now such disorders are beginning to be generally appreciated, even classified and tabulated, and to this extent their increase is only apparent.

There is, however, another important factor—what the Germans call the *Krankheitsgewinn*. Since psychogenic illnesses have become not only recognized but rewarded, a person who suffers from the physical changes associated with anxiety and other emotions, instead of being turned away, is now given elaborate treatments, certificates of unfitness for work, and perhaps a holiday at a convalescent home. Thus he lacks incentive to adjust himself to, or overcome, a trouble from which he indirectly profits. Physical treatment alone tends but to fix the symptoms. During the war, in the special neurological hospitals (I speak especially for Maghull), while hostilities continued psychoneurotic soldiers were difficult to cure. Being in hospital and out of danger satisfied their unconscious longings. After the armistice, however, most of them got well with surprising rapidity, thanks not to them nor to their physicians but to the fact that the cause of their fears had ceased to operate, and early discharge offered advantages. Then followed the Ministry of Pensions clinics, on which I also served, and there again I met with the *Krankheitsgewinn* factor—the larger the pension the more difficult the treatment. I do not refer to conscious malingering, though this also existed, but to the unconscious clinging to a symptom for its secondary value. Now that in many forms a comparable reward is easily obtained, we must expect a real increase in the number and duration of "psychosomatic" illnesses.—I am, etc.,

Caldecote, July 3. A. E. CARVER.

SIR,—The present widening interest in the psychogenic aspect of illness will be reinforced by the opportune survey contributed by Dr. J. L. Halliday to the *Journal* of July 2 (p. 11). It is becoming increasingly evident that in a large number of cases of "functional nervous disorder" there is an initial failure on the part of the individual concerned to adapt and adjust himself to his environment. The underlying psychological conflict tends to resolve itself along the familiar lines of either mental or physical disability, the particular variety of which appears to be conditioned by the personality "make-up" of the patient in each case. In this connexion two (among several) important factors appear worthy of attention—namely, (*a*) the individual's power of inhibiting his own instinctive fears, etc., and (*b*) the trend of his imaginative activities—that is, whether in a constructive or destructive direction. For brevity this may be represented diagrammatically thus:


Normal Well-integrated Personality
Inhibition of excessive fear, etc.
Well-controlled "constructive" imagination
Emotional restraint
Planned activity
Successful adaptation
Immature, Unstable, or "Neuropathic" Personality
Ineffective inhibition of fear, etc.
Uncontrolled "destructive" imagination
Heightened emotional tension; or sometimes (in the case of "repression," for example, hysteria) apparent outward indifference
Inadequate adaptation; hence, psychoneurotic and psychosomatic illness

Power of adaptation is the keynote. Where the normal stable individual would skilfully tack, or take in sail, to meet life's sudden squalls, the "neuropath," imbued as he often is from the start with a spirit of congenital defeatism, tends to heel over and capsize. The remedy lies to hand, and involves (1) systematic inculcation of sound psychological principles during every student's hospital training; and (2) earlier detection of, and psychotherapeutic assistance for, the unstable type of individual who would otherwise drift into psychoneurotic or psychosomatic illness.—I am, etc.,

Boscombe, July 4. W. V. HARKE.

The Unconscious Mind and Medical Practice

SIR,—The art of psychotherapy, like the art of other branches of medical practice, can only be learned through its exercise. The textbooks which Dr. G. Waugh Scott (*Journal*, July 2, p. 39) has read should have given him an insight into the general principles of analytical psychology. Every case, however, is a separate problem, and in the nature of things it is impossible to provide him with a *vade mecum* in which he has only to refer to the index to find a specified treatment for each symptom. Take the two cases which he brings forward as illustrations: both the man and the woman are punishing themselves by inflicting on themselves the thing they fear most, the thing most damaging to their respective egos. To clear up the condition one would have to discover the source of the childish unintegrated guilt which they are thus expiating, and investigate the current mental conflicts which have revived the latent ones.

My advice to Dr. Waugh Scott is to begin the investigation boldly on the general lines which he has learned, leaving the particular symptoms to take care of themselves. He will soon find that he is accumulating a wealth of material which will point the way to a cure. *Solvitur ambulando!*—I am, etc.,

Birmingham, July 4. R. MACDONALD LADELL.

Mental After-care

SIR,—May I be permitted to lay before readers of the *Journal* a brief account of the aims and activities of the Mental After-Care Association, the nature of whose work is inclined, unfortunately, to be known only to a limited public specially interested in mental or nervous illness. We feel that if a greater knowledge and insight were given as to the valuable assistance rendered through this association to patients leaving mental hospitals the sympathy of a very much larger public would be obtained.

The stormy progress of the mental hospital towards honourable recognition is becoming increasingly well known, and it was in 1879 that this association was founded with a view to helping patients leaving mental hospitals to readjust themselves to a great extent before they were expected to face the difficulties of normal life, from which many may be cut off for a period of years. Our convalescent homes enable those patients to spend a few weeks in an atmosphere less disciplined than that of hospital routine, and at the same time not so completely lacking in supervision as is expected when they leave to take up work in the ordinary way.

Unfortunately, it is still true that the layman is inclined to distrust the man or woman who has been in a mental hospital, no matter what the cause may have been; and in this respect we have, through our employment bureau, been able to assist patient and employer alike by placing the patient in suitable work and by interviewing the prospective employer, who then feels that he can apply to us if he is dissatisfied, while each patient who passes through our hands knows he or she can look to us for a sympathetic reception should occasion arise. Our most recent addition has been the inauguration of a summer holiday to suitable patients still under treatment in hospital, and the experiment has been well justified. This summer we hope to give two weeks' holiday to over one thousand patients from various mental hospitals.

As your readers will readily understand, all this entails a great deal of expense, and if our high standard of efficiency is to be maintained we must look to our very many good friends to assist us. Even the smallest amount will be most gratefully received.—I am, etc.,

REGINALD WORTH,
Chairman, Mental After-care Association.

Room 354, Grand Buildings,
Trafalgar Square, W.C.2.

Treatment of Pneumonia

SIR,—To quote from your leading article of June 25 (p. 1371): "If chemotherapy can equal or even approach serum therapy in efficacy serum will stand little chance of more extended trial." Certainly the results obtained recently by Dr. Telling and Dr. Oliver (*Lancet*, 1938, **1**, 1391) and in a hundred consecutive cases by Dr. Evans and Dr. Gaisford (ibid., 1938, **2**, 14) indicate a definite superiority over serum treatment. The difficulties of treatment by specific sera are obvious. Sera have been used with success in America against many different types of pneumococci, but only Types I and II antisera have been much used in this country. If serum treatment is adopted typing is essential, but in many cases sputum is not obtainable early enough. Surely it should be possible to obtain the specific organisms directly from the pneumonic lung by aspiration with an exploring syringe. Serum treatment has other disadvantages—for example, the possibility of anaphylactic reactions occurring. The effects upon the pneumococci of the chemotherapeutic agent and of a type-specific serum are essentially similar. The specific serum combines with the capsule, upon which the virulence and type specificity depend, detoxicating the organism and making it vulnerable to phagocytosis. T693 also has a definite action on the capsule. In either case the pneumococci lose their virulence and are readily destroyed by leucocytes.

Professor Fleming (*Journal*, July 2, p. 37) recommends that specific immune serum should be used together with the chemical agent, because he found that human blood with the addition of T693 and immune serum could deal with a much larger infection than the same blood containing either T693 or immune serum only. Cannot the same effect as that achieved by a combination of serum and T693 be obtained by giving a larger dosage of the chemical agent? T693, according to Whitby, has a great advantage over sulphanilamide in being relatively non-toxic, although active, in small doses.

Evans and Gaisford in a few cases gave as much as 9 grammes in the first twenty-four hours with beneficial effect. There were no toxic symptoms with the exception of cyanosis—in about a quarter of the intensively treated cases—which disappeared when the drug was withdrawn. If it is possible to increase the amount of the drug when the infection is especially severe without detriment to the patient, surely there can be no necessity to supplement its action with serum.

It is upon the efficiency of the polymorphonuclear leucocytes that recovery from pneumonia ultimately

depends; if they fail neither serum nor chemotherapy can save the patient's life. The onset of granulocytopenia during the course of acute pneumonia is of fatal significance, and even leucopenia is of serious import. J. B. G. Muir (*Journal*, April 30, p. 942) records a case of pneumococcal peritonitis in a child aged 10, in which the leucocyte count fell rapidly to 2,700 per c.mm., but treatment with pentose nucleotide raised the count to 27,000 per c.mm. in a few days, and the patient eventually recovered, in spite of the complication of double lobar pneumonia. Even when leucocytosis remains at a considerable height the bactericidal power of the blood may be deficient. Leucocytes from different individuals, especially those suffering from acute infections, may vary considerably in phagocytic activity. In such cases the addition of fresh human blood from a suitable donor, especially if of high leucocytic activity, may turn the scale in the patient's favour. The leucocytic content of the donor's blood may be increased by a previous injection of sodium nucleinate, and the leucocytes' non-specific phagocytic activity may be enhanced by the intravenous injection of a small amount of staphylococcal vaccine a few hours before the blood is withdrawn, or it may even be added to the blood after withdrawal. Frequent blood counts with differential leucocyte counts during the course of the illness are a useful guide to treatment.—I am, etc.,

Worthing, July 5. HERBERT H. BROWN.

Psittacosis

SIR,—In the *Journal* of April 2 (p. 737) there appeared a leading article on psittacosis, in which it was stated that a carrier state is readily set up in budgerigars, and that it is from such apparently healthy carriers that many of the human cases have arisen during the last few years.

In October, 1937, I attended a female patient, aged 46, who died from an atypical bronchopneumonia on the eighteenth day of her illness. Her temperature fell to subnormal on the seventh day, and for the ensuing eleven days remained subnormal. During this period her respirations varied from 32 to 48 a minute, and her pulse rate remained constantly at 120 a minute. On the day of her death her pulse rate fell to 72.

It is interesting to note that her husband bred budgerigars, and at times the patient had attended to them. The birds were kept in somewhat close proximity to the kitchen. Examination of the birds failed to reveal any sign of psittacosis. Nevertheless I am of the opinion that her death was due to psittacosis. In Australia and New Zealand the budgerigar has become a favourite household pet. Some fond owners kiss their budgerigars goodnight with a regularity calculated to arouse the jealousy of a perhaps somewhat neglected child! Let us hope we shall not hear in the future of what may be termed a budgerigar complex! In all seriousness I believe that unrecognized cases of psittacosis have probably occurred in Australia and New Zealand. Might it not be as well to record all cases of severe pneumonia in which the patient has been in contact with sick, or apparently healthy, budgerigars?—I am, etc.,

Auckland, June 1. J. P. HASTINGS.

Treatment of Placenta Praevia

SIR,—In the case described by Dr. H. Gordon Oliver (May 14, p. 1071) Willett's forceps applied to the scalp with slight traction might have been a suitable form of treatment. Dr. Oliver seems to have been particularly lucky with his case. With a low placental implantation the cervix is like wet blotting-paper, and attempts at manual dilatation are often likely to cause serious trauma and haemorrhage. The prolonged manipulation is also likely to increase the risk of sepsis. Delivery of a full-term baby (8¾ lb. in this case) through an os seven-eighths dilated carries the risk of damage to the cervical supports, with possibilities of gynaecological complications.

Another point that needs comment is the fact that Dr. Oliver administered prontosil after the case actually showed signs of sepsis; this should have been given as a prophylactic from the start, with such extensive manipulation carried out near the site of placental implantation.

If vaginal examination is carried out with due attention to asepsis, using gloves and a mask, this will not be any serious contraindication to a section. Cases of marginal placentas rarely assume a serious state and can usually wait, and all cases of uterine haemorrhage during the last few months of pregnancy, unless too far away, ought to be transferred to a hospital after an injection of morphine, without a vaginal examination unless one is fully equipped and prepared to deal with a case on the spot. The slight loss that the patient may have in transit can be easily made good by a transfusion at an institution.—I am, etc.,

District Hospital, Sungei Patani, Kedah, Malaya, June 22. S. K. KELKAR.

SIR,—We would like to thank Professor F. J. Browne for his helpful criticism (*Journal*, July 2, p. 38). We cannot help being surprised, however, when we read his query, "Do the writers really believe that packing the vagina controls haemorrhage from placenta praevia if the membranes are unruptured?" We would respectfully urge Professor Browne to re-read our paper, and in particular the section headed "Principles and Practical Aspects of the Treatment," in paragraph 3 of which we wrote: "When either marginal or lateral placenta praevia was diagnosed the membranes were artificially ruptured, whether the patient was in labour or not, and as much liquor as possible was allowed to escape. This usually led to satisfactory descent of the presenting part, and packing the vagina was employed only if bleeding was profuse or continuous." Again, in paragraph 6 (*c*) we wrote: "While packing of the vagina in conjunction with artificial rupture of the membranes is a recognized stimulus to uterine contraction we have not found that unduly rapid delivery resulted."

Only in cases of central placenta praevia was plugging ever employed before the membranes had either ruptured spontaneously or been ruptured artificially. We would not attempt to defend plugging *per se* but only as an integral part of the routine to be adopted under the circumstances described, and would stress the fact that it should always be performed under strictly aseptic conditions, preferably in hospital. We hope that these quotations explain the principle employed, which was to effect haemostasis by compressing the placenta between the foetal head above and the plugging below.—We are, etc.,

Samaritan Free Hospital for Women, London, N.W.1, July 9. J. E. GIESEN O. LLOYD.

Small-pox and Compulsory Vaccination

SIR,—A statement is made by Dr. A. L. Craddock in his letter on diphtheria prophylaxis (*Journal*, July 2, p. 42) which really cannot be allowed to pass unchallenged. After referring to the entire freedom of this country from fatal small-pox in 1937, he goes on to say: "There can be little reasonable doubt that the remarkable position in

respect of small-pox is due largely to compulsory vaccination." If Dr. Craddock really believes this, I can only suppose that he is entirely out of touch with current views among those most familiar with the questions of the aetiology and prophylaxis of small-pox. I wonder if he knows that resolutions in favour of the abolition of compulsory vaccination have been passed by both the Association of County Medical Officers of Health and the Society of Medical Officers of Health; and does he realize that the disappearance of fatal small-pox in this country has largely coincided with a continuous decline in compulsory examination? Also, is he aware that localities which have taken the lead in the abandonment of compulsory vaccination have shown just as great a reduction in small-pox mortality as the rest of the country? In the city of Leicester, where compulsory vaccination was abandoned over fifty years ago, and where for many years the proportion of infants vaccinated has been less than 5 per cent., there have been only two deaths from small-pox in the last thirty-three years.—I am, etc.,

Leicester, July 5. C. KILLICK MILLARD.

Psoriasis

SIR,—I read with interest Dr. John T. Ingram's excellent article on psoriasis (*Journal*, April 23, p. 881). I have been using ultra-violet radiation in combination with various unguents in the treatment of psoriasis for the past two years, and in many cases have found it very satisfactory. In treating some of my fellow practitioners I have tried out, successively, salicylic acid, mercurials, cignolin, and tar preparations in ointment or paint form, together with the ultra-violet light. I found that the tar preparations were the most effective, and for cleanliness a paint with an acetone and benzol base was preferred. Many patients with psoriasis state that they are free from this condition in the bathing season, and usually give the credit to the sea and water. Many are so sensitive about their eruption, however, that they will not appear in a bathing suit.

I agree with Dr. Ingram that a small ultra-violet lamp in the patient's home would be most valuable to prevent recurrences, but I do not agree with his method of giving a small daily dose. I consider that most of the benefit is derived from some degree of erythema; most areas require only a very mild reaction, but resistant areas, like the knees and elbows, need a brisk reaction. I have had several patients come to me from the northern Australian sheep stations, where it is very hot and very sunny. From constant exposure (working with their sleeves rolled up) their forearms, hands, faces, and necks have been very deeply tanned, but these tanned areas have been just as much affected by the psoriasis as the covered areas. In treating these patients moderate exposure to ultra-violet light and the application of an ointment will clear up the covered parts, but on the exposed areas a heavy dosage of ultra-violet rays is necessary. Does it not seem rational to suppose that with frequent applications the skin will cease to react to moderate doses and the psoriasis will return, as on the exposed parts of the patients I have mentioned, and is it not also likely to increase the risk of keratosis developing later? I have advised the smallest amount of exposure necessary to clear up the attack, and have found little, if any, increase of dosage necessary for the recurrences.—I am, etc.,

Adelaide, May 31. WM. GILFILLAN, Clinical Assistant, Skin Department, Adelaide Hospital.

Complications of Gold Therapy

SIR,—I am glad to see that Dr. H. Warren Crowe (*Journal*, July 2, p. 44) has become a convert to gold therapy, and I feel he deserves our congratulations on his results in that he has never had a toxic reaction in his series. This experience, I am sure, must be unique. He states that "gold is given in minimum doses at as long an interval as possible, depending on the tendency of the symptoms . . . to recur." My own experience is that those cases which have done best in the end have had a recurrence of symptoms during treatment. Having tried gold in the very small doses prescribed by Dr. Crowe, I am not surprised that there is no reaction, but on the other hand I have failed also to secure beneficial effect; no complication is likely to arise after the administration of one-hundredth of the initial dose.

I do not agree that "the kind of gold salt used does not appear to make very much difference." This again is contrary to the experience of most workers. I have seen marked differences with the various salts used, which is not unexpected, considering their different chemical characteristics. During the past year, however, using neo-solganol, which is a calcium-gold-keratin preparation, it has been found that reactions have been much less marked and the progress much quicker than with other preparations. In only one case so treated has there been any skin reaction.

It must be very difficult, of course, to assess therapeutic effects when two separate treatments based on entirely different conceptions of therapy are being used simultaneously.—I am, etc.,

London, W.1, July 5. GERALD SLOT.

SIR,—Dr. Warren Crowe is to be congratulated upon the satisfactory results he obtains with "gold" injections and particularly upon the absence of "any toxic reaction of any kind whatever."

Auro-intoxication is nevertheless a problem which confronts most other workers in this particular field. A considerable amount of experiment, investigation, and inquiry has been carried out at the Royal National Hospital for Rheumatic Diseases, Bath, to find a method of predicting those cases which may suffer from intoxication by "gold," but so far without result. The giving of small doses does not ensure the absence of reaction; added to which the reaction may be delayed for some weeks after the last injection. A hospital patient of mine developed auro-intoxication with skin lesions after a total of 0.17 gramme divided in five doses at weekly intervals.—I am, etc.,

Bath, July 4. JOHN B. BENNETT.

Quinsy–Peritonsillar Abscess

SIR,—Having read the correspondence on "Quinsy-Peritonsillar Abscess," and noted that it is often found difficult to evacuate the pus effectually, may I (although not a surgeon) venture to describe a method which I have frequently found to be very effective.

When the abscess is behind the tonsil and cannot be opened properly and the neck is swollen at that side, I make a small incision (under local anaesthetic) just behind the sterno-mastoid about the level of the chin and cut through fascia; then take sinus forceps and insert the closed point, passing it behind the sterno-mastoid (postero-medial) and forward, then draw the handle forward so that the point moves in a curve forward, medially, and up, and then further up and slightly back

till the point is almost behind the tonsil. Then open the forceps and pus pours out; insert glove drain.

One has to go slowly and gently and feel the way. My first patient collapsed momentarily and recovered (probably pressure on a sympathetic ganglion). Have the neck very slightly flexed in the process.—I am, etc.,

H. M. DENHOLM-YOUNG, M.A., M.B., Ch.B.

Edinburgh, July 8.

The Final M.B., B.S.Lond.

SIR,—You were good enough to give hospitality in your columns in the early part of this year to a discussion of certain suggestions for a measure of co-operation with the Conjoint Board of the Royal Colleges in the final examination for the M.B., B.S. of London University. The Senate were informed in a memorandum (dated January 11, 1937) presented by the then Vice-Chancellor to the Board of the Faculty of Medicine of London University and thereafter communicated to the Senate that "of the medical students receiving their education in London only 17 per cent. obtained a degree," and it was upon this information, subsequently proved to be erroneous, that the Senate in May, 1937, authorized the Board of the Faculty of Medicine "to discuss with representatives of the Royal College of Physicians and the Royal College of Surgeons the problem submitted to the Senate by the Court—namely, the small number of students in Medical Schools who take a Degree of the University of London."

Acting upon this authorization delegates appointed by the Faculty Board from its own membership conferred with delegates from the Royal Colleges. The result of this conference as it affected the Royal Colleges was submitted to the Comitia of the Royal College of Physicians on May 12, 1938, in the following terms: "After giving long and serious consideration to the matter the Delegates" (of the two Royal Colleges) "came to the conclusion that the plan of a common examination presents so many difficulties as to be impracticable, *nor do they think that it would be in the best interests of medical education in London*. [The italics are mine.—E. G.-L.] They therefore recommend the Royal Colleges not to agree to it." The recommendation was then and there adopted without modification and without any dissentient voice by the Physicians and a few days later by the Surgeons. This decision of the Royal Colleges was reported to a meeting of the Board of the Faculty of Medicine on July 7, 1938, and the Board had obviously no alternative but to acquiesce in it.

Thus ends the third effort in forty years to establish a common standard of examination in the final medical examinations of the Conjoint Board and the University. The first sustained drive in this direction was made during the sitting of the Gresham Commission in 1894. It was the evidence given to that Commission by that veteran and doughty fighter, Sir William Collins, that was chiefly responsible for the rejection of the proposal by the Commission, and graduates in medicine of London University owe him special gratitude. The second effort was made in 1912, during the sitting of the Haldane Commission, and was, it was thought, killed by the masterly statement, contained in the report, published in 1913, demonstrating very conclusively that the suggested co-operation would not be in the true interests of medical education, thus anticipating the verdict now recorded by the Royal Colleges themselves, which we may hope will finally discourage any further attempt of this nature.

At its meeting in May, 1937, the Senate, upon the motion of the External Council, took the step of appointing a second Committee of its own body, to consider:

"(*a*) how far the problem mentioned in the Vice-Chancellor's Memorandum of January 11, 1937, can be solved within the Statutes, and

(*b*) the statistical purport of the difficulty;

and that this Committee report to the Senate through the Academic and External Councils."

Upon the advice of the Vice-Chancellor no meeting of this committee has yet been called, as it was considered advisable to await the outcome of the conference between the Board of the Faculty of Medicine and the Royal Colleges. Now that this Conference has come to the decision recorded above the way is open to investigate the real position of the problem, the seriousness of which was undoubtedly exaggerated in the memorandum of January 11. Professor Greenwood has contributed to the medical press[1] certain statistics which would indicate that 50 to 60 per cent. would be an approximation to the percentage of London University students in medical schools who take the final medical degree of the University. These figures, though still unsatisfactory, are not nearly so calamitous as the Vice-Chancellor's Memorandum suggested, and modifications entirely within the power of the University to make, such as more frequent examinations, new adjustments of the curriculum, etc., may bring about the further improvement, anticipated and hoped for by the Court, "during the next quinquennium."—I am, etc.,

E. GRAHAM-LITTLE.

House of Commons, July 10.

The Medical Directory, 1939

SIR,—To maintain the accuracy of our annual volume we rely upon the return of our schedule, which has been posted to each member of the medical profession. Should the schedule have been lost or mislaid we will gladly forward a duplicate upon request. The full names of the doctor should be sent for identification.—We are, etc.,

J. AND A. CHURCHILL LTD.

104, Gloucester Place, Portman Square, W.1, July 11.

Obituary

HARRY CAMPBELL, M.D., F.R.C.P.

Consulting Physician, West End Hospital for Nervous Diseases, London

Dr. Harry Campbell, who died on July 8, was the sixth son of Hugh Campbell of Eweland Hall, Margaretting, Essex, and was educated at Carshalton House and in Germany at Neuwied-am-Rhein, and then entered St. Bartholomew's Hospital, where he was prominent in work and play, captaining the Rugby XV of 1881 which won the inter-hospitals cup. In the same year he qualified M.R.C.S., and graduated M.B., B.S.Lond. in 1882, proceeding to the M.D. in 1885. He was elected soon afterwards to the staff of the North-West London Hospital as assistant physician and pathologist, and retired as full physician in 1919. In 1896 he was elected a Fellow of the Royal College of Physicians of London, and joined the visiting staff of the West End Hospital for Nervous Diseases, to which he was physician for many years and finally consulting physican.

[1] *Lancet*, July 31, 1937.

Outside the practice of medicine Dr. Campbell had many intellectual interests. He was a Fellow of the Anthropological Society, and a former President of the Society for the Study of Inebriety. He had a clear and agreeable literary style, and his writings covered a wide range of subjects: the physiology of eyesight; flushing and morbid blushing; differences in the nervous organization of men and women; respiratory exercises in the treatment of disease; man's mental evolution, past and future; and the principles of dietetics. He published in 1889 a philosophical essay on *The Causation of Disease*, and in 1924 *Fundamental Principles in Treatment*; and a number of other books stand to his credit. He also edited the fifth edition of *Aids to Pathology*, and was for fifteen years editor of the *Medical Press and Circular*. Everything he wrote bore the stamp of a thoughtful, inquiring, and critical mind.

Dr. Harry Campbell joined the British Medical Association forty-five years ago. He was vice-president of the Section of Neurology and Psychiatry at the Annual Meeting at Newcastle-upon-Tyne in 1921, and vice-president of the Section of Medical Sociology at the Annual Meeting in Dublin in 1933. From time to time throughout his career he contributed to the columns of the *British Medical Journal*, and a short letter pleading for a precise definition of the term "unconscious," written only a few days before his death, appeared in our last issue.

Dr. C. O. Hawthorne writes:

To not a few of the seniors among us the death of Harry Campbell means the close of a rare friendship and the revival of many memories. He had a place of his own, and it was a place in the affection as well as in the regard and admiration of his fellows. His store of knowledge was vast and varied, the fruit of wide reading and careful observation; and the material supplied by the one as by the other was analysed and arranged by a highly critical and reflective mind. His numerous writings carry the mark of these processes and provoke thought as well as supply it. Medicine was for Campbell a department of natural history, and he cultivated all the avenues, remembering always that in the care of the patient is the true opportunity of the physician. Generally, though he delighted in teaching, he was more effective with the written than with the spoken word, for gentleness and persuasiveness rather than emphasis marked his method, and the unqualified proposition was hardly within his vocabulary. With the pen he was a literary artist, insistent on precision both in definition and in argument, and not a few of his contributions have left an impress both on medical and on philosophic thought. Best of all he was a gentle, unselfish, and sensitive soul, with no thought of envy and no ungenerous word. And it is the memory of these things that will abide with those who knew him long and loved him well.

We have received the following tribute to the late Dr. CHARLTON HALL from Drs. Constance D. Roberts, W. E. Rutledge, and Ian D. Dickson: At this late period, we feel it is not out of place to record a note of appreciation of the privilege of having known Charlton Hall. It is doubtful if any member of the medical profession in the district was more popular, not only among his colleagues, but in the hospital over which he presided. As superintendent of the City of Norwich Mental Hospital it was his constant wish to make the patients feel that they were members of one large family, being cared for as sick-minded rather than surrounded by asylum walls, and in this he succeeded. We have known Dr. Hall as a friend, a physician, and a sportsman, and in none was he lacking in enthusiasm and thoroughness. Perhaps his most striking characteristic was his ability to see the best in his fellow men. He was indeed the friend of all, the enemy of none. Norwich has lost a great character and humanitarian, whose place will be difficult to fill. The sympathy of his colleagues, staff, and patients goes to his widow, who in the past was such a help and inspiration to her husband.

Dr. HENRY OTTRIDGE REIK, who died on June 2, was one of the three delegates to the centenary celebrations of the British Medical Association in 1932 from the American Medical Association. Born in Baltimore, Maryland, in 1868, he graduated from Maryland College of Pharmacy in 1888 and M.D. in 1891 from the Maryland University School of Medicine. He was in general medical practice from 1891 to 1894, and after postgraduate courses in Johns Hopkins University and in Glasgow and London, including work at Moorfields Eye Hospital, he returned to Baltimore to specialize in diseases of the eye and ear. He held the post of professor of ophthalmology and otology in the Johns Hopkins Medical School from 1896 to 1912, and was a founder of the Baltimore Eye, Ear and Throat Hospital. He was general secretary of the International Otological Congress from 1909 to 1921. During the war he served in the United States army with the ranks of captain, major, and lieutenant-colonel from 1917 to 1919 and was promoted colonel in the U.S.A. Reserve Corps in 1923. An injury to his right hand prevented his return to surgical practice, and he was appointed secretary of the New York Academy of Medicine committee on postgraduate medical courses from 1919 to 1920; in the latter year he was appointed editor-in-chief of international medical and surgical surveys, and four years later he became executive secretary of the Medical Society of New Jersey and editor of its *Journal*. He was the author of *Surgical Pathology and Treatment of Diseases of the Ear* and *Diseases of the Ear, Nose, and Throat*, and books on the conservation of the special senses and the national parks of America. He was a member of the American Ophthalmological, Otological, and Laryngological Societies.

Dr. JAMES ANTHONY MCVEA died on June 6 at his residence in Netherton, Ayrshire. After early education at Ayr Academy he went to Glasgow University, where he graduated M.B., Ch.B. in 1903. He was subsequently for a time assistant to Dr. James McGill of Colyton, and then practised for some years with his sister, Dr. Janet McVea, in Lydenburg, South Africa. In 1914 he obtained a commission in the Navy, and was surgeon in it until the end of the war, after which, in 1920, he rejoined his sister, who was then in practice in Ayr. He became a member of the British Medical Association in the same year. Dr. McVea was very skilful in the building of model ships, and exhibited one vessel of the Armada period in the Empire Exhibition at Bellahouston; it is now in the Palace of Engineering. He was a member of the Ayr Amateur Photographic Society, a keen shot and angler, and had a wide circle of professional and lay friends. He is survived by his mother and sister.

Dr. ALFRED ERNEST WILSON HIRD, a former member of Birmingham City Council, died recently at his home in Hagley Road, and a memoir appeared in the *Birmingham Post* of June 28. The son of a Coventry practitioner, Dr. Hird was born at Edinburgh in 1887. He was educated at Cambridge and Birmingham Universities, and after qualifying M.R.C.S., L.R.C.P. in 1908 became house-surgeon at the Birmingham General Hospital under Sir Gilbert Barling. From 1909 to 1910 he was house-surgeon to the gynaecological department, and was awarded the senior gynaecological prize. In 1911 he was appointed a junior medical officer to the Birmingham Education Committee, and was visiting surgical casualty officer to the General Hospital from 1912 to 1914.

He was mobilized on August 2, 1914, and served in naval hospital ships and naval hospitals until February, 1919. He was mentioned for valuable services rendered during these years, and received the R.N.V.R. Officers' Decoration. Dr. Hird was promoted surgeon commander, R.N.V.R., in 1925 and surgeon captain in 1933, the year in which he retired. Immediately after the war he was appointed one of the assistant visiting anaesthetists to Queen's Hospital, Birmingham.

Dr. GEORGE ANTHONY ZELLER, superintendent of the State Asylum at Peoria, Illinois (1898–1935), and one of America's leading alienists, died of heart disease on June 29 at the age of 79.

Known as the Father of French Dermatology, Dr. JEAN DARIER of the Saint-Louis Hospital in Paris has just died at a ripe old age and after retirement from medical practice. Though his birthplace was Geneva, he spent most of his life in France, where he acquired many honours, including membership of the French Academy of Medicine. His best-known work was his *Précis de Dermatologie*. Behind a rather cold exterior he hid a warm heart and a great capacity for enthusiasm and kindly feeling, particularly for his juniors. As a histologist and dermatologist he made important contributions to the pathology of syphilis, cancer, and tuberculosis, and his name is particularly associated with the condition of keratosis follicularis. Dr. Darier, who was 82, also had the distinction of being an Honorary Fellow of the Royal Society of Medicine.

The death is announced of Dr. GABRIEL POUCHET, professor of pharmacology and materia medica since 1892 at the Paris Faculty of Medicine. Vice-president of the *Conseil Supérieur d'Hygiène de France* and member since 1898 of the Academy of Medicine, he made important contributions to toxicology and forensic medicine, and shortly before his death at the age of 87 he was still physically and mentally alert.

Dr. SIGURD HAGEN, professor of ophthalmology at the University of Oslo, died on May 12 of a hypernephroma discovered by accident last September when he underwent a radiological examination for pain in one shoulder. Among his most important works was a study of the post-operative serous detachment of the choroid, and an experimental investigation of the secretion and regeneration of the aqueous humour.

The following well-known foreign medical men have recently died: Dr. JOHN JACOB ABEL, emeritus professor of pharmacology at Johns Hopkins University School of Medicine, Baltimore, founder and editor from 1909 to 1932 of the *Journal of Pharmacology and Experimental Therapeutics* and president of the American Association for the Advancement of Science in 1932, on May 26, aged 81; Dr. ALLEN BUCKNER KANAVEL, professor of surgery at the North-Western University Medical School, Chicago, editor of *Surgery, Gynecology and Obstetrics*, and author of a well-known book on infections of the hand, aged 63; Professor WILHELM KNOEBFELMACHER, an eminent paediatrist of Vienna, aged 72; and Dr. LUIS TAMINI, professor of orthopaedic surgery at the Buenos Aires Faculty of Medicine, aged 56.

On the site where she worked for eighteen years (1907–25) at Salisbury Street, Lisson Grove, a memorial has been established to Dr. Christine Murrell. It consists of a Medical Unit, attached to the new Portman Day Nursery of the St. Marylebone Health Society, opened this week by Viscount Stonehaven. The memorial is a tribute to Dr. Murrell's pioneer medical work in connexion with infant welfare.

Medical Notes in Parliament

Progress of Bills

The Mental Deficiency Bill passed through the committee stage in the House of Lords on July 7 without discussion or amendment.

In the House of Lords on July 12, the Green Belt (London and Home Counties) Bill was read a second time. The Registration of Stillbirths (Scotland) Bill passed through Committee.

The Protection of Animals (No. 2) Bill was also read a second time in the House of Commons on July 5. The following day the House agreed to the amendments made by the House of Lords in the Children and Young Persons Bill.

The Rating and Valuation (Air Raid Works) Bill, which was introduced by Dr. Elliot on July 7, exempts from rating structures and structural alterations made by way of precaution against air raid damage. The Bill is a complement to the provision in the Finance Bill, whereby such works are being exempted from liability to income tax. Mr. Colville presented a Scottish Bill for the same purpose as Dr. Elliot's.

The Commons agreed on July 7 to the Lords' amendment in the Baking Industry (Hours of Work) Bill.

In the House of Commons on July 12 the committee stage of the Finance Bill was concluded. The Milk (Extension and Amendment) Bill and the Food and Drugs Bill passed through committee.

The Divorce and Nullity of Marriage (Scotland) Bill was taken on Report by the House of Commons on July 12. Debate arose on an amendment by Miss Horsbrugh to delete lunacy for five years from the grounds of divorce. The amendment was defeated by 158 to 31. A subsequent proposal was to delete "Nullity of Marriage" from the title of the Bill.

Cardiazol in Treatment of Schizophrenia

On July 5 Mr. SORENSEN asked the Minister of Health whether his attention had been drawn to the cure of schizophrenia by cardiazol injections and whether this cure was being applied in all public mental hospitals. Mr. BERNAYS said this treatment had already been investigated by two medical commissioners of the Board of Control, and their report was in preparation. The treatment, which was still in the developmental stage, was being applied in a considerable number of public mental hospitals, but information was not available on the number of cases cured thereby.

Interdepartmental Committee on Abortion

Dr. ELLIOT told Sir Arnold Wilson on July 7 that the interdepartmental committee on abortion, under the chairmanship of Mr. Norman Birkett, K.C., recently completed the hearing of evidence. They were engaged in considering the evidence, and hoped to be in a position to present a report before the end of the year. It would be premature to decide at present that the evidence should be published with the report.

Refugee Doctors and Dentists

Sir SAMUEL HOARE, replying on July 7 to Sir Philip Dawson, said that as regards doctors, dentists, and oculists admitted into the United Kingdom from Germany and Austria, no separate figures were available for the year 1937. Since 1933 the number of refugee doctors (including oculists) and dentists coming from Germany who had been given permission to practise their profession after admission to the British *Medical* and *Dental Registers* was 185 and ninety-three respectively.

Expert Advice in Forensic Medicine

Sir SAMUEL HOARE, in an answer to Mr. Dobbie on July 7, said the services of two analysts, appointed by and receiving retaining fees from the Home Office, were available to the police and coroners if they had occasion to consult them. In

such cases they were remunerated in accordance with a scale of fees approved by the Treasury. In addition, forensic science laboratories had been established in London and certain other centres, with whole-time scientific staff remunerated by salary. In other cases the police could seek the assistance of other experts, who would be remunerated by fee. In every case the function of the expert was to give an opinion, as a scientist, on the material submitted to him, and he did so on his own responsibility. The responsibility for the prosecution rested with the Director of Public Prosecutions or with the police.

Holidays with Pay

The Holidays with Pay Bill, introduced by Mr. Ernest Brown, was down for second reading on July 14. This Bill empowers Trade Boards, Agricultural Wages Committees both in England and Wales and Scotland, and the Road Haulage Central Wages Board (to be set up under the Bill at present before Parliament) to direct that any workers whose wages they regulate shall be granted holidays. The duration of holidays is to be related to the period of employment with an employer. In the case of Trade Boards and Agricultural Wages Committees, holidays so granted cannot exceed a maximum of seven days in the year, and in the case of Agricultural Wages Committees there is a restriction that only three of these days can be required to be taken consecutively. Otherwise, the times, periods, and circumstances in which holidays shall be allowed are left for settlement by the wage-regulating authority.

Family Allowances in the House of Lords

The BISHOP OF WINCHESTER moved in the House of Lords on July 7 that a committee be appointed to report on proposals for a national policy of family allowances. He said that a number of children were deprived of many necessities of life. To the employed labourer with a family there should be extended the policy already in operation for the unemployed man, who was given an additional allowance for every child that he had.

Lord ASTOR said the last report of the Chief Medical Officer of the Board of Education on the health of the school child emphasized the fact that there was a problem of malnutrition. Lord TEMPLEMORE said that in the view of the Government there were at least five lines of approach to this subject. These were a general increase of wages, the grant of family allowances by employers to those workpeople who had large families, the formation of pooled funds for the same purpose in the different industries, the creation of a National Family Allowances Fund out of the contributions of employers, workpeople, and the Exchequer, and, finally, the direct provision of family allowances out of the Exchequer. Opinion was not yet fully formed and the Government did not think the stage had been reached when it would be useful to set up a formal body to examine the subject.

The Bishop of Winchester withdrew his motion.

Research into Poultry Diseases

In the House of Commons on July 11, Mr. W. S. MORRISON explained the Government's policy with regard to eggs and poultry. He said the Government accepted the view of the Poultry Technical Committee that one of the vital factors affecting the prosperity of the industry in Great Britain was the high incidence of mortality in poultry flocks. The Government were impressed by the Committee's views on the urgent nature of the disease problem in the industry. They therefore proposed that a Poultry Commission for Great Britain should be set up with the responsibility of conducting a stock-improvement scheme on voluntary lines and with power to control the distribution of breeding stock. The Government was also prepared to facilitate the establishment of a research station for the investigation of the major disease problems of the industry, and to give sympathetic consideration to a scheme, which the Commission would be asked to prepare, for the establishment of a progeny-testing station with a view to the production of the highest quality foundation stock. The proposal for a poultry research station was already under consideration by the Agricultural Research Council. Legislation to give effect to these and other proposals would be introduced.

Living Conditions in Mercantile Marine Service

The vote for Mercantile Marine services was debated by the House of Commons on July 8. Mr. GREENWOOD moved to reduce it. He said that despite improvements made during the last few years conditions for life and service in the mercantile marine were unsatisfactory, particularly in the coastal service.

Mr. OWEN EVANS said it was a common practice of British shipowners to instruct that their ships were not to be heated when in port. In some ships there was no hot water and no running water for anybody. Sailors' quarters and bed linen should be kept clean by someone whose job on board ship that was, and not by the sailors themselves. Commander FLETCHER said that the medical officer of the port of Hull reported that in the majority of the ships entering Hull the crew accommodation was, in the opinion of a sanitarian, quite unsuited for human habitation. Lady ASTOR stated that this medical officer's survey had extended over 1,800 ships, half of them British. The new regulations did not affect the old ships, in many of which the conditions of the crews' quarters was far worse than any conditions in the slums of London. Good shipowners said that when conditions were improved the crews responded in a remarkable way. Commander MARSDEN said the medical officer of the port of Manchester reported striking advances during 1937 in the hygiene and amenities of crew spaces.

Mr. OLIVER STANLEY said no attempt had been made during the debate to criticize the instructions issued with regard to new ships. His inspectors were instructed last autumn to make every effort, when they noticed the need and possibility of alteration in an old ship, to get it made by co-operation with the shipowner. As a result substantial improvements had been made in a number of ships. He received monthly reports on this work.

The motion to reduce the Vote was defeated.

Drug Traffic in China

On July 11 Mr. BUTLER told Mr. McEntee that he could not say whether there had been an increase in the sale of dangerous drugs in the International Settlement at Shanghai. Of the opium seized during 1937 consignments came from both North and South China, while the heroin was thought to have come mainly from the North. Replying to Mr. Banfield, Mr. BUTLER said that during 1937, 255 persons were arrested by the police force of the International Settlement at Shanghai for being concerned in the sale of opium and narcotic drugs. Of these, 144 were Chinese, 97 Koreans, 13 Japanese, and 1 Latvian. On the same day Sir ERNEST GRAHAM-LITTLE asked whether the British Government would obtain an official report from British representatives in Manchukuo as to the extent to which traffic in narcotics was being stimulated and whether there was any record at the Chinese and Manchukuo ports of the quantity and value of dangerous drugs imported, as well as any indication of the source of origin.

Mr. BUTLER said he would consider the suggestion of a report. The quantity and value of opium imported into Manchukuo, as well as the countries of origin, were published in the annual Customs reports. No similar figures were available in the case of China.

Silicosis in Lancashire and Cheshire

Sir SAMUEL HOARE, replying to Mr. Gordon Macdonald on July 11, said the Silicosis Medical Board granted eight certificates in 1937 to workmen last employed in coal mines in Lancashire and Cheshire: 4 in 1936, 3 in 1935, 3 in 1934, and 4 in 1933. The inclusion of mines elsewhere than in South

Wales was not contemplated as part of the investigation into lung conditions among coal-miners at present being carried out by the Committee of the Medical Research Council, their method in this instance being to make an intensive study in a selected locality rather than a general survey. The value of the findings, however, would not be restricted to the sample area from which the evidence was drawn.

Mr. MARSHALL asked whether, in view of the great difficulty in establishing claims under the Silicosis Regulations, especially in the grinding trades, the Home Secretary would give an undertaking to bring in early legislation to remedy these grave difficulties. Sir SAMUEL HOARE said that question did not arise.

Mr. GRENFELL asked the Home Secretary to consider making a submission to the Medical Board for a revision of the diagnosis, because there was failure to obtain an award in a large number of cases of persons who died from this disease. Sir Samuel Hoare said that that also was a more general question than that on the order paper, but he would take into account what Mr. Grenfell had said.

Maternity and Child Welfare Clinics

On July 12 Mr. ACLAND asked how many local authorities established clinics according to the permission given to them under Circular 1622; and whether any steps were taken or contemplated to increase the number. Dr. ELLIOT said that of the 365 welfare authorities in England to which this circular was addressed, 347 had ante-natal clinics and twelve others had arrangements for ante-natal supervision by means of a domiciliary general practitioner service. Authorities having post-natal clinics or special arrangements for post-natal cases to attend at ante-natal clinics numbered 236; 133 authorities had special ante-natal consultative clinics, and 159 had special gynaecological clinics. His Department had followed up the circular by correspondence with the local authorities of areas in which, according to his information, the existing provision needed to be supplemented.

Administration of Analgesics by Midwives.—Dr. ELLIOT told Dr. Summerskill on June 23 that in the information which he would ask from local authorities for this year's Annual Return would be the number of local authorities who had arranged for the midwives in their employ to have special instruction in order that they might unaided give their patients analgesia. He would also ask how many local authorities availed themselves of the powers conferred upon them to provide the necessary apparatus for their midwives in order that analgesia may be available for women at their confinements.

Premature Death Registration.—Colonel BURTON asked what were the circumstances under which a certain Mrs. Martha Brabben obtained a certificate of the death of Mr. James Alfred Douthitt of Hamilton Street, Camden Town, registered his death, and caused arrangements to be made for his funeral when in fact he was still alive. Dr. ELLIOT replied on July 1 that Mrs. Brabben, Mr. Douthitt's landlady, seeing Mr. Douthitt lying motionless, came to the mistaken conclusion that he was dead. In this belief she informed Mr. Douthitt's medical attendant, who, being acquainted with Mr. Douthitt's medical condition, issued a certificate of cause of death. Mrs. Brabben then took steps for the registration of the death; and since she was a fully qualified informant in her capacity as "the occupier of the house in which, to her knowledge, the death took place," the registrar duly registered the death upon her information. Mr. Douthitt proved to be alive on Mrs. Brabben's return home.

Women Medical Inspectors for Insured Persons.—Mr. GRAHAM WHITE asked on July 7 how many women medical officers were available in the north-western divisional area when women members of approved societies were obliged to submit themselves under the rules of their societies. Dr. ELLIOT said there was one woman medical officer available in the north-western divisional area for the examination of cases.

Mr. White asserted that on one recent occasion it was impossible to secure the attendance of a woman medical officer, while Mrs. TATE and Lady ASTOR suggested that the difficulty arose because medical women had to give up their posts on marriage. Dr. ELLIOT said that in fact there were only six demands from the north-west area to see a woman medical inspector.

Nutritional State of School Children.—School medical officers' annual reports for all areas in England and Wales include statistics of the assessment of the nutrition of children examined at routine medical inspection during the year 1937. In 260 out of the 315 areas some children are shown to be suffering from bad nutrition, but in many cases the number is very small, often only one or two out of several thousand children examined, and the total number of such children represents 0.6 per cent. of the number examined. In addition 10.7 per cent. are shown to have slightly subnormal nutrition. These figures were given by Mr. Kenneth Lindsay on July 7.

Supply of Gas Respirators.—Mr. LLOYD, replying to Mr. Perkins on July 12, said he was aware that gas respirators were being offered for sale: but no such respirator had been approved by the Home Office unless it bore the Home Office certification mark. It was the Government's policy to supply respirators for the whole of the civilian population free of charge.

Notes in Brief

The Minister of Health anticipates that it will be possible to publish his report, which relates to the financial year ended March 31, 1938, in about four weeks. Asked to arrange for earlier publication, Dr. ELLIOT points out that the report is based to a large extent on statistical information which has to be obtained from local authorities and analysed in the Department.

Mr. Wedderburn stated on June 30 that in Scotland there were two deaths from the effects of vaccination in 1927, one in 1928, one in 1930, and one in 1931. Two deaths from small-pox occurred in 1930. No deaths from either cause occurred in Scotland between 1931 and 1936, the latest year for which figures were available.

A member of the staff of the Medical Research Council is giving his whole time to the investigation of infantile paralysis and cognate diseases.

Colonel Colville hopes to make a statement before the end of the session on the Government's intentions with regard to the recommendations of the Gilmour Committee on the reorganization of Scottish offices.

The number of patients who, on April 1, 1938, were receiving treatment in residential institutions under the schemes of local authorities in England and Wales for the institutional treatment of tuberculosis was 27,968. The number of persons who had been awaiting such treatment for more than ten days was 1,798.

The full cost of the Joint Council of Midwifery nutrition scheme for expectant mothers from January, 1937, to March 31, 1938, has been met from the amount of £8,500 granted by the Commissioner for the Special Areas. Before January, 1937, the cost was defrayed out of voluntary contributions.

Of 257 cases of tuberculosis notified in single-apartment houses in Glasgow during 1937, 190 were in overcrowded houses.

The average *per capita* consumption of liquid milk in Great Britain during the year ended May 31, 1936, the latest period in respect of which adequate information is available, is estimated to have been two-fifths of a pint daily.

Mr. W. S. MORRISON states that during the period of three months following the date on which Part IV of the Agriculture Act, 1937, came into operation—namely, April 1, 1938—payments totalling £4,085 were made out of the Diseases of Animals Account to cattle owners in respect of assistance under the tuberculosis (attested herds) schemes towards the cost of tuberculin tests with a view to eradicating tuberculosis from the herds concerned.

No. 26.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 2, 1938.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns (124 in 1937) in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns (9 in 1937) in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1938					1937 (Corresponding Week)					1929-37 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	18	2	10	1	1	15	2	7		—		
Deaths		—	—				—	2				
Diphtheria	943	140	176	44	21	1,094	145	141	35	20	903	164
Deaths	22	2	5	1	1	20	2	2	—	1		
Dysentery	47	11	27		—	35	3	17		—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	4	—	—	1	—	2	—	—		—		
Deaths		1					1					
Enteric (typhoid and paratyphoid) fever	26	5	3	5	—	21	2	10	11	—	42	—
Deaths	—	—	—	1	—	1	—	1	—	—		
Erysipelas			57	2	5			55	4	1		
Deaths		—					—					
Infective enteritis or diarrhoea under 2 years												
Deaths	39	9	15	1	3	46	9	9	2	2		
Measles			113		6			83		—		
Deaths	8	3	3	1	—	8	1	2	2	—		
Ophthalmia neonatorum	105	10	49		—	104	10	35		2		
Deaths												
Pneumonia, influenzal‡	622	45	12	7	22	589	39	5		3	605	49
Deaths (from influenza)	17	3	—	2	—	4	—	2	—	1		
Pneumonia, primary			178	9				176	6			
Deaths		16		6	13		1		7	3		
Polio-encephalitis, acute	1	—				2	—					
Deaths		—					—					
Poliomyelitis, acute	3	—	8	1	—	8	1	1	1	—		
Deaths		—					2					
Puerperal fever	4*	4	23	2	1	39	3	9	2	—		
Deaths		2†					1†					
Puerperal pyrexia	184	30	17		2	111	14	20		—		
Deaths												
Relapsing fever	—	—			—	1	—	—		—		
Deaths												
Scarlet fever	1,641	152	361	88	78	1,803	196	339	98	41	1,598	230
Deaths	2	1	1	—	—	4	—	—	—	—		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—	—	—		—	—		
Typhus fever	—	—	—	—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough			97		13			72		4		
Deaths	13	3	3	—	1	18	7	5	—	2		
Deaths (0-1 year)	279	51	59	30	14	288	43	71	19	14		
Infant mortality rate (per 1,000 live births)	46	42				49	36					
Deaths (excluding stillbirths)	3,926	739	521	167	150	3,986	732	561	144	121		
Annual death rate (per 1,000 persons living)	9.6	9.4	10.6	11.3	13.3	9.9	9.2	11.5	9.8	11.6		
Live births	6,884	1,313	979	338	260	6,665	1,324	893	333	205		
Annual rate per 1,000 persons living	16.9	16.7	19.9	22.9	23.0	16.5	16.7	18.3	22.7	19.6		
Stillbirths	300	46				300	50					
Rate per 1,000 total births (including stillborn)	42	34				43	36					

* After October 1, 1937, puerperal fever was made notifiable only in the administrative county of London.

† Deaths from puerperal sepsis.

‡ Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

EPIDEMIOLOGICAL NOTES*

Enteric Fever

During the week under review 26 cases of enteric fever were notified in England and Wales, compared with 20 in the previous week; of these 5 (0) were in London—2 each in Battersea and St. Marylebone, and 1 in St. Pancras. In Scotland 3 cases of typhoid fever were recorded—1 each in Glasgow, Greenock, and Paisley.

Diphtheria and Scarlet Fever

Notifications of diphtheria in England and Wales fell from 989 to 943 in the week under review, and in London from 146 to 140. There was also a marked drop in the notifications for Scotland—176 as against 191—and for Northern Ireland a slight decrease—21 as against 22; but in Eire there was a rise from 41 to 44. Deaths from diphtheria in the 126 Great Towns of England and Wales remained at 22, while in London they fell from 4 to 2. Of the 22 deaths recorded in the 126 Great Towns 2 each occurred in Chester (0), Liverpool (2), Manchester (1), Newport (0). There were 5 deaths from diphtheria in the 16 principal towns of Scotland during the week under review—3 (4) in Glasgow, and 1 each in Dundee (0) and Aberdeen (0). There was a decrease in the number of notifications of scarlet fever in England and Wales during the week—1,641 as against 1,765—and in London, where 152 cases were recorded, compared with 171 in the previous week. In England and Wales the figures were slightly in excess of the median value for the last nine years, but in London they were considerably less. There were two deaths from scarlet fever in the 126 Great Towns of England and Wales during the week under review, compared with 3 in the previous week; of these 1 (1) occurred in London. Notifications in Scotland rose from 355 to 361, with 1 death, and in Eire from 79 to 88; but in Northern Ireland they remained at 78.

Primary and Influenzal Pneumonia

Notifications of primary and influenzal pneumonia in England and Wales fell from 758 to 622 during the week under review, and in London from 76 to 45; the figure for England and Wales is well above the median value for the last nine years, while that for London is below it. There were 17 deaths from influenza in the 126 Great Towns of England and Wales, compared with 20 in the previous week; in London the number of deaths from influenza rose from 2 to 3. In the West Riding (Yorks) 82 (103) cases were notified, of which 30 (33) were in Sheffield, 24 (25) in the Administrative County, 14 (20) in Leeds. In Warwickshire 35 (39) cases were notified, of which 25 (24) were in Birmingham and 6 (10) in the Administrative County. Of the 118 (136) cases reported in Lancashire, 30 (37) occurred in Liverpool, 18 (37) in Manchester, 21 (25) in the Administrative County. Of the 17 deaths from influenza recorded in the 126 Great Towns of England and Wales during the week, 3 (2) were in London, and 2 each in Portsmouth (0) and Cardiff (0). In Scotland 178 cases of primary pneumonia were notified, compared with 192 in the previous week, while there were 12 cases of influenzal pneumonia—compared with 5 in the previous week—with no deaths. In Eire there were 9 (11) cases of primary pneumonia and 6 (7) deaths, 4 (6) of which were in Dublin. There were 13 (14) deaths from pneumonia in the ten principal towns of Northern Ireland during the week—9 (11) in Belfast, 3 (0) in Londonderry, and 1 (1) in Larne.

Measles and Whooping-cough

In the 126 Great Towns there were 8 deaths from measles during the week under review, compared with 10 in the previous week; of these 3 (1) occurred in London, 2 (0) in Newcastle-upon-Tyne, and 1 each in Barnsley (1), Sunderland (0), Stoke-on-Trent (0). During the week 348 cases were reported from the L.C.C. elementary schools, compared with 422 in the previous week. The average daily admissions to the L.C.C. fever hospitals were 18, the same as last week, and the number of cases of measles under treatment in these hospitals on Friday, July 1, was 724, compared with 860 on June 24. On the same day there were under treatment in the L.C.C. fever hospitals 918 (940) cases of diphtheria, 682 (761) cases of scarlet fever, 252 (263) cases of whooping-cough. Notifications for the week ended July 2 in the eleven metropolitan boroughs in which measles is notifiable were 164 (241), distributed as follows: Battersea 18 (34), Bermondsey 6 (11), Finsbury 8 (16), Fulham 10 (27), Greenwich 63 (47), Hampstead 6 (11), Lambeth 17 (36), St. Pancras 15 (33), Shoreditch 6 (5), Southwark 10 (13), Stepney 5 (8). In Scotland 113 cases of measles were notified, compared with 173 in the previous week; the figures for Kirkcaldy were 35 (19), for Glasgow (37) and Falkirk (28) 17 each, for Dundee 13 (22), for Lanark County 9 (21), and for Edinburgh 7 (8). During the week there were 3 deaths from measles in the 16 principal towns of Scotland—1 each in Glasgow, Edinburgh, and Dundee. In Eire there was 1 death from measles, occurring in Dublin, and none in Northern Ireland. Of the 6 cases of measles reported in Northern Ireland, 5 were in Warrenpoint and 1 in Lisnaskea.

In England and Wales there were 13 (18) deaths from whooping-cough during the week, of which 3 (2) occurred in London. In Scotland 97 cases of whooping-cough were notified, compared with 123 in the previous week, while there were 3 deaths—2 (0) in Kilmarnock and 1 (1) in Glasgow. In Northern Ireland 13 (22) cases of whooping-cough were recorded, with 1 death.

Cholera

During the week ended July 2, 301 cases of cholera were reported at Shanghai, and 25 cases with 14 deaths in Hong Kong. In the same week in Burma 8 cases with 6 deaths were notified, in Calcutta 41 cases with 18 deaths, in Bombay (Presidency) 63 cases with 27 deaths, in Delhi 3 cases with 1 death. In the Central Provinces 1,034 cases with 505 deaths were reported during the week under review, in the North-West Frontier Province 149 cases with 73 deaths, in Madras (Presidency) 287 cases with 111 deaths, in the Punjab 112 cases with 54 deaths, in Sind 16 cases with 11 deaths, and in the United Provinces 7 cases with 2 deaths in Allahabad and 3 cases with 2 deaths in Cawnpore. In French Indo-China during the same week 117 cases of cholera were notified in Annam, 177 in Tonking, and 3 in Hanoi.

Plague

During the week ended July 2, 17 cases of plague with 10 deaths were reported in Burma. In British India in the same week 5 cases with 4 deaths were notified in Bombay (Presidency) and 2 cases with 1 death in Madras (Presidency).

Small-pox

During the week ended July 2 there was 1 case each of small-pox reported in Shanghai and Hong Kong. In the same week in Burma 8 cases were notified; in British India 22 cases with 9 deaths were reported in Calcutta, 172 cases with 29 deaths in Bombay (Presidency), 37 cases with 9 deaths in the Central Provinces, 36 cases with 12 deaths in Madras (Presidency), 28 cases with 10 deaths in the North-West Frontier Province, 62 cases with 9 deaths in Sind. In the same week in French Indo-China there were 23 cases of small-pox in Tonking. During the week ended June 25, 225 cases were reported in the U.S.A.

Typhus

During the week ended July 2 in Egypt 1 case of typhus was reported in Alexandria, 2 cases in Cairo, and 65 cases in the Provinces. In the previous week 71 cases with 6 deaths were notified in Morocco, mainly distributed as follows: Chaouia 17 cases, 3 deaths; Marrakesh 13 cases; Dukkala 8 cases; Casablanca 7 cases, 1 death; 5 each in Fez (1 death), Rabat, and Oued-Zem. In the same week in Tunisia 76 cases of

* Except where otherwise mentioned figures in parentheses refer to the week preceding the one under review.

typhus were recorded, mainly distributed as follows: Suk-el-Arba 14 cases, Southern Territories and Susa 12 each, and 4 each at Le Kef, Medjez-el-Bab, and Tebursuk. During the week ended June 18 in Algeria 70 cases were notified, distributed by departments as follows: Constantine 54, Southern Territories 10, Algiers 6. In Poland during the same week 44 cases with 2 deaths were reported, mainly distributed by departments as follows: 7 cases each in Lwow and Nowogrodek, Wolhynia 6 cases, Wilno 5 cases, and 3 each in Cracow and Polesia. In the U.S.A. during the week ended June 11 there were 34 cases of typhus: Georgia 16, Alabama 7, Florida 5, Texas 3, and 1 each in Connecticut, Louisiana, and Maryland.

Universities and Colleges

UNIVERSITY OF BRISTOL

The Beaverbrook Fellowship has been awarded to Beryl D. Corner, M.D.

UNIVERSITY OF LIVERPOOL

On July 5 the Council of the University reappointed Professor W. H. Wood, M.D., Dean of the Faculty of Medicine.

UNIVERSITY OF MANCHESTER

The following candidates have satisfied the examiners at the examinations indicated:

M.D.—[1] Mary A. C. Cowell, T. F. Davey, A. Harris, R. L. Holt (gold medal), N. F. Kirkman, B. Portnoy, E. N. Rowlands, [1] B. Sandler, G. G. E. Smyth.

FINAL M.B., CH.B.—N. Altham, J. N. Appleton, T. E. Barlow, J. E. Coates, A. E. David, T. B. S. Dick, A. M. Dickson, F. I. Firth, [4] G. Garmany, Edith A. Greenhalgh, Kathleen M. Henderson, [2 3] A. G. Heppleston, [2] Barbara M. Jessel, F. A. Langley, N. Levy, L. Linnell, D. Longbottom, Constance M. F. Lyth, J. C. Mellor, [2] A. Morgan-Jones, S. Mottershead, T. H. Norton, J. F. Rickards, J. K. Rowson, [4] E. Saunsbury, W. W. Wilson, Frances T. Wright. *Part I (Forensic Medicine and Hygiene and Preventive Medicine):* A. P. Bates, D. Bolchover, Irene M. Bower, J. B. Brownlie, Frances M. Bullough, R. Cocker, G. R. Crawshaw, Olive I. Elkin, Barbara H. Fiddian, Mary Fleure, R. T. Grime, Joan Halstead, P. Haslam, J. E. Horrocks, Hannah Horton, W. L. R. Kenyon, J. Latham, Joyce Leach, A. D. Leigh, R. A. Martin, A. P. Massie, Asa Mills, M. D. Milne, M. J. Parsonage, J. R. Platt, T. H. Redfern, J. C. A. Renshaw, E. Ridehalgh, G. G. Robertson, B. Roditi, E. S. Rogers, M. S. Rowley, L. D. Rutter, J. E. Schofield, F. W. Taylor, G. K. Tutton, G. H. Whittle, A. F. Williams, R. M. Winston, E. J. Yates. *(Pathology and Bacteriology):* Peggy Anderson, G. T. Ashley, J. G. Atherton, T. G. Barlow, E. F. Burndred, J. H. Gifford, E. Lee, D. Livshin, A. S. Ogden, Barbara M. Statham, W. P. Sweetnam. *(Pharmacology):* Hilary J. Crewe, A. C. C. Davey, J. D. Johnson, F. T. Jones, F. R. L. Makin, Catherine E. D. Nash, J. C. Seddon, G. K. Spruell, D. H. M. Titcombe, H. Walmsley.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—*Part II:* Muriel Hughes, I. Sutton. *Part I:* I. Sutton.

DIPLOMA IN PUBLIC HEALTH.—*Part II:* S. K. Appleton, J. L. Armour, J. C. Brundret, Edna Circuitt, C. L. Elder, R. S. Hynd, P. A. Jennings, A. I. Ross, G. N. M. Wishart. *Part I:* S. K. Appleton, R. Bennett, J. C. Brundret, Edna Circuitt, H. D. B. North, G. R. Walker, R. C. Webster, H. C. Williamson.

[1] With commendation. [2] Second-class honours. [3] Distinction in Medicine. [4] Distinction in Surgery. [5] Distinction in Hygiene and Preventive Medicine.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council, held on July 8, Dr. J. R. Grimoldby was appointed demonstrator in anatomy.

UNIVERSITY OF ABERDEEN

The following medical degrees and diplomas were conferred at a graduation ceremony on July 6:

M.D.—R. G. A. McLaren.

M.B., CH.B.—*J. Booth, *†J. S. McConnachie, G. S. Anderson, Mary Anderson, Joyce D. Bailey-Thomson, V. A. Cran, K. S. Crawford, Williamina H. Cruickshank, T. Duncan, W. Y. Fettes, J. Fiddes, D. L. Fletcher, M. Franklin, R. G. Fullerton, J. M. Geddie, C. W. Gordon, G. F. Hamilton, E. I. Harper, A. B. Harrington, Mabel A. Henderson, G. A. Hendry, Jean E. W. Inglis, I. McD. Kerr, W. Lamb, J. Leask, R. N. Lees, L. C. Liddell, H. J. Lillie, C. J. Livingstone, W. Lumsden, D. R. Macaulay, A. F. MacBean, Dorothea F. MacBean, J. R. McBoyle, A. W. B. Macdonald, J. Macdonald, Rowla McGowan, J. McIntosh, R. E. McKenzie, Zina E. Moncrieff, Dorothy I. Mortimer, J. G. Munro, F. Murray, P. B. Nicol, R. E. M. Paterson, Phyllis J. H. Priestley, A. W. Raffan, A. G. Reid, S. McR. Reid, Hellen L. Reith, D. F. Ritchie, G. T. Robertson, Edith Scott, H. G. Skinner, A. S. Spence, J. H. Stewart, W. J. Tavendale, J. R. Tocher, J. Watson, D. F. Whyte, Ida M. Will, Elisabeth M. Williams.

D.P.H.—‡W. C. Davidson, Isabella M. O. Allan, J. R. Byars, G. G. Dickie, W. J. Godden, M. H. Webster.

* With second-class honours. † Passed Final Medical Professional Examination with distinction. ‡ With credit.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Election to the Council

Four Fellows were elected on July 7 into the Council to fill the vacancies caused by the retirement in rotation of Mr. Victor Bonney, Mr. R. C. Elmslie, and Sir William Girling Ball, and by the resignation of Mr. C. H. Fagge. The result of the poll was as follows:

	Votes
REGINALD CHEYNE ELMSLIE (St. Bartholomew's) ..	662
WILLIAM FRANCIS VICTOR BONNEY (Middlesex) ..	658
Sir WILLIAM GIRLING BALL (St. Bartholomew's) ..	657
LIONEL EDWARD CLOSE NORBURY (Royal Free) ..	502
Vincent Zachary Cope (St. Mary's)	410
Robert Joseph Willan (Newcastle-upon-Tyne) ..	395
Robert Davies-Colley (Guy's)	356
Sir Lancelot Edward Barrington-Ward (Great Ormond Street)	349
Julian Taylor (University College Hospital) ..	297
Walter Goldie Howarth (St. Thomas's)	217

In all 1,358 Fellows voted; in addition ten votes were found to be invalid. Mr. Bonney, Mr. Elmslie, and Sir William Girling Ball are all elected for the full period of eight years, and Mr. Norbury acts as substitute member for Mr. Fagge until July, 1945.

COMBINED HOSPITALS UNIVERSITY ENTRANCE SCHOLARSHIPS

The following awards have been made:

St. Bartholomew's Hospital Medical College: D. S. Cadman, St. John's College, Cambridge (Scholarship); J. N. Milnes, St. John's College, Cambridge (Exhibition).

Guy's Hospital Medical School: N. Gillman, Downing College, Cambridge (Scholarship); H. E. S. Marshall, Downing College, Cambridge (Exhibition).

St. Thomas's Hospital Medical School: J. R. Tiller, Worcester College, Oxford (Scholarship); L. H. H. May, Trinity College, Cambridge (Exhibition).

The Services

48TH AND 61ST (S.M.) DIVISIONS, R.A.M.C.

Colonel RALPH A. BRODERICK, A.D.M.S., 48th (South Midland) Division, R.A.M.C., T.A., writes: I am very anxious to promote a reunion of all old comrades of the above R.A.M.C. units who served in these Divisions during the great war. I would suggest that a reunion dinner be held in Birmingham in the late autumn of this year under the auspices of the Birmingham Branch of the R.A.M.C. Association, and I trust that you will publish this letter so that the attention of your readers may be called to the project. Will all who are interested and served in the corps during that period communicate with Lieutenant Stanford, R.A.M.C., T.A., at Stockfield Hall, Acock's Green, Birmingham, 27?

Surgeon Commander S. H. Facey, R.N. (ret.), has been awarded a Greenwich Hospital pension of £50 a year in the vacancy caused by the death of Surgeon Captain Sir Arthur Nance, K.B.E., C.B., R.N. (ret.).

DEATHS IN THE SERVICES

Major THOMAS HERBERT DICKSON, R.A.M.C. (ret.), died at Tangier, Morocco, on June 17, aged 54. He was born on December 7, 1883, the youngest son of the late Reverend T. C. Dickson of Argyle Place Church, Edinburgh, and was educated at Edinburgh University, where he graduated M.B., Ch.B. in 1906. After filling the posts of junior and assistant medical officers at the North Riding Asylum, York, and of senior house-surgeon at the Royal Sea-Bathing Hospital, Margate, he entered the Royal Army Medical Corps as lieutenant on July 31, 1909, became major in 1921, and retired on July 31, 1929.

Medical News

Mr. H. L. Eason, Principal of the University of London, has been elected an Honorary Master of the Bench of the Inner Temple.

On the afternoon of Tuesday, July 26, Dr. Walter Elliot, Minister of Health, will open the new County Infirmary at Louth, the ceremony being presided over by Lord Heneage, chairman of the Lindsey County Council.

An International Plastic Surgery Congress will be held at the Sarfatti Institute in Milan on September 25, 26, and 27. Surgeons and specialists from England, Germany, France, Scandinavia, Holland, and North America have announced their intention of attending the meeting. One of the principal subjects to be discussed is the eradication of malignant facial growths.

The twenty-fifth French Congress of Medicine will be held at Marseilles under the presidency of Professor Olmer from September 26 to 28, when the following subjects will be discussed: icterogenic spirochaetosis, hypochloraemia, and the present treatment of avitaminosis in the adult. Further information can be obtained from the general secretary, Professor Roger, 66, Boulevard Notre-Dame, Marseilles.

The fifth congress of the Latin Medical Press will be held at Lisbon from September 29 to October 2 under the presidency of Professor Reynaldo dos Santos. The subjects for discussion will be medical bibliography and the copyright of articles. Further information can be obtained from the general secretary, Professor Armando Narciso, Restauradores 48, Lisbon.

The third international congress for microbiology will be held in New York from September 2 to 9, 1939.

The introductory address before the Middlesex Hospital Medical School will be given on Tuesday, July 26, at 3 p.m., at the Queen's Hall, Langham Place, by Mr. W. Warwick James, F.R.C.S., dental surgeon to the hospital, and the prizes gained during the academic year will be distributed by Sir Edward Meyerstein.

The Child Guidance Council (Woburn House, Upper Woburn Place, W.C.) has awarded Fellowships in Psychiatry to Allan G. Crisp, M.D., Kenneth Soddy, M.B., D.P.M., and Rosalind Vacher, M.B., D.P.M. The fellowships are of the value of £300 and are tenable for a year from October, for half-time work, at the London Child Guidance Clinic, 1, Canonbury Place, Islington, N.

The Ministry of Health has sanctioned a loan of £253,000 for the first instalment of Southend's municipal hospital extension.

The King has appointed Dr. Christopher James Wilson to be an unofficial member of the Legislative Council of the Colony of Kenya.

A sanitary code regulation prohibiting the importation, breeding, and sale of birds of the psittacine or parrot family went into effect in New York State on June 1, and a similar regulation for New York City on July 1.

An institute for the study of influenza and its causes and treatment has recently been established in Budapest.

The foundation stone of an institute for hygiene, social medicine, and industrial pathology has recently been laid at Brussels.

The Minister of Pensions has arranged at the request of the Minister of Health to lend to the Ministry of Health the services of Dr. J. H. Hebb, C.B., C.B.E., K.H.P., Director-General of Medical Services in the Ministry of Pensions. Dr. Hebb, while seconded to the Ministry of Health, will be the Principal Medical Officer responsible for advising on all medical questions relating to the emergency hospital and medical services for which the Ministry have taken over responsibility from the Air Raid Precautions Department.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Cockroaches

"E. P." has asked us for the name of the vendors of a preparation called "zonol," used for the extermination of cockroaches (blackbeetles). It can be obtained from any branch of Messrs. Boots. We take this opportunity of referring "E. P." (and others similarly afflicted) to the pamphlet entitled *The Cockroach: Its Life History and How to Deal with It*, by Frederick Laing, M.A., B.Sc., published in 1921 in the Economic Series (No. 12) by the British Museum (Natural History), Cromwell Road, London, S.W.7, at 6d. per copy (postage 1d.).

Mosquito Bites

"B. B. L." writes from Scotland in answer to "B. S.'s" inquiry (May 28, p. 1192): I have found "flygo"—a Dubarry preparation—unequalled. Its only disadvantage is that it does not keep well, as it is liable to shrink when it has been lying a long time in a chemist's shop. Oil of lavender, I found, *attracted* mosquitos.

Income Tax

Professional Use of Cars

"TAXPAYER" has for many years used two cars in his practice. The local inspector of taxes has now objected to an allowance for more than one car, and even then claims to deduct 10 per cent. of the expense of one car as representing private use.

*** We cannot see the grounds for the inspector's contention. The question is one of fact. If "Taxpayer" uses two cars professionally he is entitled to the running costs, depreciation, obsolescence, etc., of both, less a reasonable percentage to cover the ratio of private use of both cars. If he were liable to assessment under Schedule E the position might be different, because the inspector could then contend that the use of two cars was not "necessary." But as regards an assessment under Schedule D that criticism is not appropriate. The inspector seems to us to be no more entitled to object to the expense of two cars than he would be entitled to say that a tradesman is employing too many assistants and that he will only allow the wages of half of them.

Expenditure on Apparatus and Books

"X. Y." has spent an abnormal amount recently on apparatus; is it advisable to claim "depreciation" on such equipment? The inspector of taxes has informed him that "no allowance

is due for additions to the medical library as distinct from periodicals or renewals." Is this so?

*** The depreciation allowance is for "plant and machinery," and surgical instruments fall under the category of "tools" rather than plant. Consequently depreciation on comparatively small and portable apparatus cannot legally be claimed, but as the various instruments, etc., become worn out or are discarded as obsolete and renewed, the cost of replacement can be claimed as a professional expense. The same principle applies to books. Where a textbook becomes out of date and is replaced by a later book on the same subject the cost can be deducted for income-tax purposes.

LETTERS, NOTES, ETC.

Nasal Sinusitis in Childhood

Mr. J. BERNSTIEN (Liverpool) writes: May I be allowed to reply to various points in Mr. Frank Coke's letter in the *Journal* of June 11 (p. 1285). In my opinion there is a definite condition in which there is thickening of the mucosa of the sinuses with the presence of mucoid fluid, and this is due to the allergic state. The mucosa of the nasal sinuses is continuous with that of the nose and participates in similar infections and conditions. Why, therefore, should the allergic phenomenon which admittedly takes place in the nose not extend to the sinuses? For my own part, I find that group testing will give me almost as much information as individual testing, and without putting the patient to the inconvenience of a number of sittings. I have also found, and I think that many others are in agreement, that a particular protein may often give a negative skin reaction and yet be allergic to the patient. That is the reason why I eliminate, at the beginning, the proteins which I have found to be the most common offenders. As the patient improves he is gradually restored to a normal diet by the method of trial and error. As to vaccines and infection, I think that often the organisms found are merely the result of the predisposing allergic condition and not the cause. Because of the unhealthy condition of the mucosa the organisms are not destroyed but proliferate. Vaccines may help, but in my opinion they do not attack the fundamental cause, and I think that is the only point of difference between Mr. Coke and myself.

Appendicitis and Heavy Meat Diet

Mr. MORTON WHITBY (London) writes: Dr. A. Forbes Brown's experiences described in the *Journal* of June 25 (p. 1390) regarding appendicitis in Uganda coincide with my own when I was Assistant Colonial Surgeon in the Falkland Islands and, later, surgeon and radiologist to Mackenzie Hospital, British Guiana. Falkland Islanders are mostly Scotsmen and Englishmen, and are compelled, owing to the lack of fresh vegetables, to live on large quantities of meat, mostly mutton. Out of every 100 operations among the inhabitants in 1925 80 were performed for appendicitis. The British Guiana native population in the Bush, seventy-five miles up the Demerara River, are almost entirely free from appendicitis. In 1926 out of 1,000 operations there was only one case of this condition, and the patient died from malaria on the day I had prepared to operate on him. A post-mortem examination revealed an acute gangrenous appendix, apart from his acute malarial cachexia. The patient had been a meat-eater while working for Europeans. These two experiences in totally different climates and under different dietetic conditions would strongly suggest that appendicitis owes its origin to a heavy meat diet.

Medical Tour to Soviet Russia

Messrs. DAVID BAND, NORMAN M. DOTT, W. T. MUNRO, H. M. TRAQUAIR, and NOEL E. WATERFIELD write: We would draw your readers' attention to the medical tour to the U.S.S.R. recently advertised in your columns by the Society for Cultural Relations (98, Gower Street, W.C.1). Our visit to the U.S.S.R. last September was arranged by the S.C.R., and we were thus enabled to make contacts with medical men and to visit medical institutes which we would otherwise have missed. The travelling arrangements made for us were excellent. Everything worked smoothly, and we had no difficulties with regard to trains and hotels. The accommodation was comfortable and the meals excellent, and the guides were very friendly and obliging. We felt that the trip had been very well worth while from the point of view of gaining knowledge concerning the important medical and social activities of the U.S.S.R., and we regard the trip also as a very pleasant holiday. The 1938 party will leave London by sea on September 7, and return overland on September 28, the cost being from £28.

A Doctor's Collection of Old Medical Books

On July 18 Messrs. Sotheby of Bond Street are selling the book collection formed by Dr. Cuthbert F. Selous of Tunbridge Wells, which includes a good many old medical books, some of them exceedingly rare. Alexis of Piedmont's *Secrets; containing excellent remedies against divers diseases*, black-letter, translated by W. Warde and published by R. Hall, 1562, is in three parts, bound together in one volume: apparently the other known copy, which is in the British Museum, has two parts only. There are also catalogued two other editions of this book, 1580 and 1595, both of them also in black-letter. Barrough's *Method of Physick*, 1624, is the sixth edition of that work, which evidently was popular. Sir R. Blackmore's *Treatise of Consumptions*, 1724, and J. J. Berlu's *Treasury of Drugs unlock'd*, 1690, precede a copy of Sir William Osler's *Incunabula Medica*. Then we come to Boerhaave's *Method of Studying Physick*, 1715; J. Parsons's *Enquiry into the Nature of Hermaphrodites*, 1741; Andrew Boorde's *Breuiary of Healthe*, 1552; and G. Baker's *The Newe Jewell of Health*, 1576; which are followed by a long string of the works of that prolific author and earnest researcher Robert Boyle. Most of these are not medical, but there are a few which are in this category—for example, *Memoirs for the Natural History of Humane Blood*, 1684; *The Reconcileableness of Specifick Medicines to the Corpuscular Hypothesis*, 1685; *Medicina Hydrostatica*, 1690; and *Medicinal Experiments*, 1692 and 1693–4. T. Bright's *Treatise of Melancholy*, 1586; *Vade Mecum; or, Companion for a Chyrurgion*, by T. Brugis, 1652; R. Bunworth's *Physical Discourse exhibiting the Cure of Diseases by Signature*, 1656, are followed by a textbook on the cure and prevention of the Plague, 1636, and by T. Cogan's *Haven of Health*, 1612. Culpeper is well represented by a series of books, of which need be quoted only his *Directory for Midwives*, 1651. Sir Thos. Elyot's *Castel of Helth corrected*, 1541, unfortunately is not quite perfect; but a later edition, 1576, is hitherto unrecorded and may well be unique. Only two other copies are known (British Museum and Cambridge University) of O. Gabelkouer's *Boock of Physicke, nuelye translated out of Low-duche by A. M.*, Dorte, Iaack Caen, 1599; and C. Gesner's *Newe Jewell of Health*, 1576, if not quite so rare, is at any rate uncommon. Another quaint title is that of G. Grataroli's *Direction for the Health of Magistrates and Studentes*, Englished by T. Newton, 1574. Balneology is the subject of several treatises, including T. Guidott's *Discourse of Bathe and the Hot Waters there*, 1676; Jorden's *Discourse of Naturall Bathes and Minerall Waters*, 1633; Tonstall's *Scarborough Spaw Spagyrically Anatomized*, 1670; Wittie's *Scarborough Spaw*, 1667; and T. Venner's *Via recta ad vitam Longam, whereunto is annexed Baths of Bathe, as also Treatise concerning Tobacco*, 1638. There are first editions of T. Willis's *Cerebri Anatome*, 1664, and *De Anima Brutorum*, 1672, as well as others by that author; also a copy of William Harvey's *De Generatione Animalium*, published at Amsterdam in 1651, the same year as the first edition. Langham's *Garden of Health* is represented by the first edition of 1579 and by a later one, 1633. Another interesting old book is the *New Mystery in Physick discovered by curing of Fevers and Agues by Quinquina or Jesuites Powder*, translated by Dr. Belon, 1681. There are many other medical books in this collection, as well as a large amount of general literature: and in a further collection for disposal in the same sale are a few more, including another edition of Willis's *De Anima Brutorum . . . nempe Cerebrum et Nervosum Genus afficiunt, explicat, eorumque Therapeias instituit*, Amsterdam, 1674, and another copy of the 1692 edition of R. Boyle's *Medicinal Experiments*.

A little book by Miss J. Halford, entitled *The Diet for Expectant and Nursing Mothers*, is published by the Food Education Society, 29, Gordon Square, W.C.1, post free 3½d. It opens with a series of cautions calculated to remove false impressions as to the diet under such conditions. These are followed by numerous practical hints.